How to Make a Business Case for an Antimicrobial Stewardship Program
Introduction

• Antimicrobial stewardship has emerged as an important strategy for optimizing antimicrobial use

• The Infectious Diseases Society of America (IDSA) and the Society of Healthcare Epidemiology of America (SHEA) recommends the implementation of ASPs within acute care hospitals

• As of 2013, Accreditation Canada mandates that all acute care facilities have an ASP

Dellit TH et al. Clin Infect Dis 2007;44:159-177

Accreditation Canada 2012 ROP Handbook (www.accreditation.ca)
Goals of Antimicrobial Stewardship

• The primary goal of antimicrobial stewardship programs (ASPs) are to minimize adverse effects associated with antimicrobials including:
  • Drug toxicity
  • *Clostridium difficile*
  • Emergence of antimicrobial resistance

• Cost savings are not the primary goal of ASPs but the cost efficiencies associated with ASPs are a useful argument when developing a business case for hospitals

Dellit T *et al*. Clin Infect Dis 2007;44:159-177
SHEA, IDSA and PIDS. ICHE 2012;33:322-327
How to Make a Hospital Business Case for an ASP

Step 1
• Frame the problem and develop a hypothesis about potential solutions

Step 2
• Meet with key administrators

Step 3
• Determine the annual cost

Step 4
• Determine what costs can be avoided

Step 5
• Calculate the financial impact

Step 6
• Make the case for your business case

Step 7
• Prospectively collection cost and outcome data once the program is in effect

Framework by Stevenson et al. ICHE 2012;33:389-397
Step 1
Frame the program and develop a hypothesis about potential solutions

• No ‘one-size-fits-all’ approach to ASPs.

• ASPs should be tailored to each hospital, factoring size, resources, local antimicrobial prescription and resistance patterns and patient population.

Additional Resource
ASP 101 Presentation
and ASP Gap Analysis Tool

Dellit T et al. Clin Infect Dis 2007;44:159-177
SHEA, IDSA and PIDS. ICHE 2012;33:322-327
Each hospital to define how their facility can best meet the objectives of an ASP

Examples of ASP Elements

- Prospective audit with intervention and feedback
- Formulary restriction and preauthorization
- Education
- Guidelines and clinical pathways
- Antimicrobial order forms
- Streamlining and de-escalation of therapy
- Dose optimization
- Parenteral to oral conversion

Dellit T et al. Clin Infect Dis 2007;44:159-177
SHEA, IDSA and PIDS. ICHE 2012;33:322-327
### ASP Elements Potential Advantages and Disadvantages

<table>
<thead>
<tr>
<th>ASP Element</th>
<th>Advantages</th>
<th>Disadvantages/Barriers</th>
</tr>
</thead>
</table>
| Prospective audit with intervention and feedback | • reduced inappropriate antimicrobial use  
  • Most likely to impact future prescribing practices                                        | • Requires a continuous resource commitment  
  • Most labour intensive intervention                                                        |
| Formulary restriction and preauthorization       | • Immediate and significant reductions in antimicrobial use and costs                                                                       | • Increased staffing requirements  
  • Delay in treatment while awaiting approval  
  • Use may shift to an alternative agent with resulting increased resistance  
  • Prescriber pushback due to perceived loss of autonomy                                    |
### ASP Elements Potential Advantages and Disadvantages

<table>
<thead>
<tr>
<th>ASP Element</th>
<th>Advantages</th>
<th>Disadvantages/Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidelines and clinical pathways</td>
<td>• Improved antimicrobial use and reduced practice variation</td>
<td>• Poor adherence</td>
</tr>
<tr>
<td>Antimicrobial order forms</td>
<td>• Improved antimicrobial use</td>
<td>• Time required to fill out form</td>
</tr>
<tr>
<td></td>
<td>• Facilitated implementation of guidelines and clinical pathways</td>
<td>• Logistics of making forms available for use and uses aware of existence of form</td>
</tr>
<tr>
<td>Streamlining and de-escalation of therapy</td>
<td>• Reduced antimicrobial exposure, selection of resistant pathogens, and healthcare costs</td>
<td>• Prescriber reluctance to de-escalate therapy when cultures are negative and clinical improvement has been observed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Requires a continuous resource commitment</td>
</tr>
</tbody>
</table>
# ASP Elements Potential Advantages and Disadvantages

<table>
<thead>
<tr>
<th>ASP Element</th>
<th>Advantages</th>
<th>Disadvantages/Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>• Improved prescribing behaviour and acceptance of ASP strategies</td>
<td>• Marginal efficacy for modifying prescribing behaviour when used as sole intervention</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Need for repetition</td>
</tr>
<tr>
<td>Dose optimization</td>
<td>• Improved and more appropriate antimicrobial use</td>
<td>• Requires a continuous resource commitment</td>
</tr>
<tr>
<td>Parenteral to oral conversion</td>
<td>• Decreased hospital length of stay, work load and health care costs</td>
<td>• Requires a continuous resource commitment</td>
</tr>
</tbody>
</table>
Consider Membership of the ASP Team

• Successful ASPs require an inter-disciplinary team approach (frontline staff and senior administrators)

• Team members should include but are not limited to:
  • Physician champion
  • Pharmacist
  • Microbiology laboratory services
  • Infection Prevention and Control professional

Dellit T et al. Clin Infect Dis 2007;44:159-177
SHEA, IDSA and PIDS. ICHE 2012;33:322-327

Additional Resource
ASP 101 Presentation
Metrics and Evaluation

• Measuring the impact of an ASP is an essential component of an ASP
  • Demonstrating success is typically necessary for maintaining/expanding ASP funding

• The choice of measurement will be influenced by local availability of data and patient population

Additional Resource
ASP 101 and Metrics and Evaluation Module
Examples of ASP measurement options

- Defined Daily Dose (DDD)
- Days of therapy (DOT)
- Length of therapy (LOT)
- Antimicrobial resistance trends
- *C. difficile* rates
- Antimicrobial expenditures
- Grams of antimicrobials
- Proportion of interventions accepted, if using audit and feedback
Step 2
Meet with key administrators

• Gaining the support of senior hospital administrators is essential for successful funding of an ASP business case

• Senior administrators can help by:
  1. Providing examples of successful business cases within their institution and outlining the preferred formatting of the business case;
  2. Providing logistical guidance;
  3. Identifying critical costs to consider;
  4. Identifying important individuals and/or departments to involve when making the business case; AND
  5. Assisting in framing key goals and deliverables.
Important Points

• ASPs require significant time and ASPs will not succeed if work is added without additional funds or manpower

• It is important that funds for ASPs not be drawn from existing programs (i.e. Infection control, environmental services)

• The resources required will be proportional to the size of the hospital

• Most ASPs start small and grow over time
Step 3
Determine the annual cost

- Costs include the salary (and benefits) for the ASP team members
- Costs for the program elements chosen
Step 4
Determine what costs can be avoided

• Potential costs avoided can include:
  • Antimicrobial cost savings from optimized antimicrobial use
  • ↓ in the number of *C. difficile* cases;
  • ↓ in length of stay;
  • ↓ in cases of antibiotic resistant organisms

• Published attributable cost estimates are available for *C. difficile* and antimicrobial resistant organisms if local costs are not available

  Stevenson et al. ICHE 2012;33:389-397

Step 5
Calculate the financial impact

Projected Cost + Estimated Cost Reductions = Financial Impact
Step 6
Make the case for your business case

• Although completion of a thorough business case analysis is important, it is only the first step

• How the business case is presented and communicated is of equal importance

• Partner and engage senior leadership from the start
  • Often the most useful way to strategize the optimal communication strategy
Step 7
Prospectively collect cost and outcome data once the program is in effect

- Timely communication of the ASP metrics is critical in maintaining support for the program

Source: Microsoft Clipart
Contact

For more information contact:

Website:  www.oahpp.ca

Email:  asp@oahpp.ca
References:


• Society for Healthcare Epidemiology of America; Infectious Diseases Society of America; Pediatric Infectious Diseases Society. Policy statement on antimicrobial stewardship by the Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), and the Pediatric Infectious Diseases Society (PIDS).  Infect Control Hosp Epidemiol. 2012;33(4):322-327