Phase Final Presentation

Research About Antimicrobial Stewardship Program

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Outlines

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- Purpose of the project
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Background Introduction

- **Definition of Antimicrobial Stewardship Program (ASP):** Programs in hospitals seeking to optimize antimicrobial prescribing in order to improve individual patient care as well as reduce hospital costs and slow the spread of antimicrobial resistance\(^1\).

- With antimicrobial resistance on the rise worldwide and few new antibiotics agents in development, ASPs are more important than ever.
Purpose of the Project

- The application of ASP is still in the early stage but more antibiotic resistance requires urgent actions.

- Maryland Health Care Commission (MHCC), as a regulatory agency that plans for health system needs, is planning to provide guidelines for ASP in Maryland hospitals.

- Need a strong understanding of best strategies and assessment of current practice.
Project Overview

- Background research about Antimicrobial Stewardship Program (ASP): importance, current trends, cost-effectiveness etc.
- Current regulations about ASP at the federal level and in other states
- Help with analysis of 2013-2014 Infection Prevention Control Program Annual Survey for hospitals (emphasis on ASP)
- Goal and Next Step: recommendations of ASP for Maryland hospitals and other healthcare settings
Method

1. **Literature review**: keyword search for “Antimicrobial Stewardship” “ASP” and read through 71 published papers related to ASP research.

2. **Current regulations**: Use CDC/WHO/CMS websites as guideline to search for relevant regulations and status in other states or associations.

3. **Analysis of 2013-2014 Infection Prevention Control Program Annual Survey**: with questions specific about ASP.

4. **MHCC conference and group discussions**.
# Findings - Literature Review

## Detailed background review of ASP
- Importance of ASP
- Benefit of ASP: public health influence and cost-effectiveness
- Best practice and current trends of ASP

## Current regulations at national level
- International Perspective: WHO, TATFAR (EU and USA collaboration)
- Domestic Perspective: CDC get Smart Program, defined 7 key components in ASP, CMS pilot
- ASP in different healthcare settings and national association regulations

## Current practice at state level
- California as example: first state with ASP legislation
- Georgia, South Dakota
- New York City Department of Health
Guidelines From CDC and California Experience

7 Key Components of CDC³:

- Leadership commitment
- Accountability
- Drug Expertise
- Action
- Tracking
- Reporting
- Education

California 3-tier key components⁴:

- **Basic Program**
  - a hospital antimicrobial stewardship policy or procedure
  - a multidisciplinary committee

- **Intermediate Program**
  - annual antibiogram, monitoring procedures

- **Advanced Program**
  - prospective audits with intervention/feedback
  - formulary restriction with preauthorization
Findings-MHCC IPC Survey Questions on ASP

1. Does your hospital have any of the following staff resources in place in regards to current implementation of an Antimicrobial Stewardship program (ASP)? Please select all that apply.

- Committee responsible for oversight of an ASP
- Physician responsible for oversight of an ASP
- PharmD with training/certification in infectious diseases
- None of the above, no ASP currently in place
- Other

Other included: Formal policy/procedure for restricted antimicrobials; Pharmacy and Therapeutics committee oversees ASP; ASP facilitated by corporate office; 4 residency trained pharmacists with board certification; antibiograms and reviews for appropriate use.
Findings-MHCC IPC Survey

Questions on ASP

2. Does your hospital use electronic medical records (EMR) and/or computerized physician order entry (CPOE) or another data mining software to help with ASP? Check all that apply.

- Yes, we use EMR
- Yes, we use CPOE
- Yes, we use another data mining software
- No, we do not use any of the above in our ASP
- NA, we do not have an ASP

Other data mining included: Theradoc, Quality Compass, Safety Surveillor (Pharmacy Module), Sentri 7, Epic
3. If you currently do NOT have an ASP in place, do you face any of the following barriers? Please check all that apply.

- No access to infectious disease physician: 7
- No access to pharmacists with infectious disease training/certification: 7
- Pharmacy not staffed to provide support: 8
- Limited or no support from hospital administration: 2
- NA, my hospital has an ASP in place: 38
MHCC IPC Survey Questions on ASP: Metrics of measuring ASP use (open ended question)

- 11 hospitals review antimicrobial use, restricted antibiotic use or appropriateness of use
- 6 hospitals track costs or money saved
- 5 hospitals track DDD (Defined daily dose) per 1000 patient days
- 4 hospitals track DOT (Days of therapy) per 1000 patient days.
Conclusion

- Most Maryland hospitals already have some sort of ASP implemented (38/46)
- However, the formats and definitions vary from place to place
- Need a standardized checklist and measurement metrics
- Other states have some strategies which are useful in our case: California 3-tier program, CDC checklist, NYC toolkits
- Wider application of NHSN AUR-Surveillance for ASP module, EMR and CPOE in the future
Limitation and Challenges

- ASP is closely relevant to clinical practice and surveillance
- Information for most states are not readily available and need more clarification
- How to fill the GAP?—need consensus from stakeholders
- Need more research about the current practice among Maryland hospitals
Policy/Practice Implications

- Understanding of the definitions and importance of ASP is critical to raise awareness and provide education to general public as well as hospital staff.

- In-depth research about current practice in other states will help MHCC to establish guidelines and implement recommendations.

- Next step is to fill in the gap and promote ASP state-wide.
Reference


Acknowledgements

To the MHCC office and the team:
- Eileen Witherspoon
- Theressa Lee
- MHCC colleagues

To the PHASE Faculty:
- Jennifer Le
- Beth Resnick
Questions?

“Getting patients the right antibiotics when they need them.”