Pharmacy Driven Rapid Bacteremia Response Program

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Purpose

• Create RBRP to position pharmacy to manage a comprehensive bacteremia response service
• Optimize time from Gram stain to adequate empiric therapy
• Increase rate of repeat blood cultures in gram-positive cocci (GPC) in clusters
• Maximize rapid diagnostic technology
• Escalate or de-escalate antimicrobial therapy in real time
• Expedite appropriate patient isolation
• Communicates results in clear and timely manner

Description of the Program

• Starting March 6, 2017, all inpatient blood culture Gram stains were called by microbiology lab to central pharmacists in real time
• Rapid diagnostic technologies were called by microbiology lab to Infectious diseases pharmacist Monday-Friday, 7:00-3:30
• Central pharmacists outside of those hours
• Antimicrobial escalation or de-escalation
• Gram stain assessment
• Maximize rapid diagnostic technology

Impact of RBRP on Time to Antibiotic Therapy

Pre-RBHP

Rapid Diagnostic Processing

Allocated Provider Response Time

Scheduling Delay

Antibiotic Ordering Delay

Rapid Diagnostic Result Algorithm

RBRP Gram Stain Response Program Algorithm

Pre-Rapid Bacteremia Response Program Time to Antibiotic Therapy

Experience with the Program

Pharmacy Interventions

• Gram stain interventions
  > 2,282 blood culture Gram stains
  > 781 (34%) S. aureus
  > Median time from Gram stain to administration: 51 minutes (IQR 32-95 minutes)
  > Fastest time recorded: 7 minutes

Data collected March 2017 – February 2018

• Repeat blood cultures
  > 90% cases of GPC in clusters had repeat blood cultures ordered
  > 2.4-fold increase in rate

• Rapid diagnostic results interventions
  > 2,046 rapid diagnostic results
  > Antibiotic regimens adjusted in 56% of cases

• Antimicrobial escalation in real time

Discussion/Conclusion

• RBRP is associated with reduced LOS and 30-day mortality in patients with community-acquired SAB
• RBRP highlights the role of pharmacy services as champions of complex disease states by efficiently, accurately, and comprehensively managing multiple facets of bacteremia care
• RBRP is reproducible in most hospitals and other healthcare settings because it does not rely heavily on infectious diseases clinical coverage

References