The Problem
On a daily basis there are hundreds of cultures that are collected and resulted in the BID-P Clinical Microbiology Lab. Sensitivities are evaluated by the Microbiology Technologists in an ongoing fashion and alerts are sent to prescribers when initial empiric antimicrobial therapy is resulted as resistant. Prior to implementation of Meditech 6.0 the microbiology technologist would identify a mismatch and attempt to call the prescriber or contact the clinical staff pharmacist for assistance resulting in delays to change to an agent which demonstrates sensitivity. There was no definitive method of assuring contact with the prescriber. This process resulted in up to 24 hour delays in adjusting antimicrobial therapy.

Aim/Goal
- The BID-Plymouth Antimicrobial Stewardship Committee determined that the clinical staff pharmacists were the most appropriate clinicians to monitor and assure that the patient was on the appropriate antimicrobial agent as a result of the microsensitivity reports.
- Clinical staff pharmacists have previously been given the responsibility to perform Pharmacokinetic Dosing of Vancomycin and Aminoglycosides, Automatic Renal Dosing and Automatic IV-to-PO conversion of antimicrobial agents. These programs allow constant medication management which involves ongoing assessment.
- It was determined that the goal for time from notification of a mismatch until resolution will be 2 hours. The committee felt that this time frame offered ample time for the pharmacist to assess rationale for initial empiric antimicrobial therapy and contact the prescriber as needed to review need for change or maintain current therapy.

The Team
Stephanie Marglin, MD, BID-Plymouth Infectious Diseases
Connie Schmidt, RN, BID-Plymouth ID Specialist
Sari Fonseca, BID Plymouth Manager Microbiology Department
Kristina L. McGill, R.Ph., MS, BID-Plymouth Director of Pharmacy
David Thompson, R.Ph., MS BID-Plymouth Clinical Pharmacy Coordinator
Judy VanTilburg, RN,BSN,MMH,CPHQ, BIDP Senior Director of Quality and Safety
James A. Berghelli, RPh, MS,BID-Plymouth Director,Clinical Integration/Clinical Pathways

The Interventions
Microsensitivity Mismatch Computerized Meditech Reports were the design of the Clinical IT Specialists to identify patients who were currently on antimicrobial agents, yet, culture and sensitivity testing reported that agent as resistant. An individual patient report auto-prints to the Main Pharmacy once it is identified. The Microsensitivity Mismatch Summary Reports were designed to auto-print in the Main Pharmacy 7 days a week at 0500-1200-1530. This report would capture all individual reports which were printed from the last summary report. This summary report was also designed to auto-print to the offices of Clinical Pharmacy Leadership as a back-up to assure that each report was completed. PharmD students are assigned to this project each clinical rotation with the responsibility of monitoring interventions by the clinical staff pharmacists and documenting outcomes.

The Results/Progress to Date
2012 - 2013 Results/Findings: (20 months)
Total Mismatches Identified 299
Antimicrobial Agents Changed 167 (56%)
Time to Mismatch Resolution 1.6 hours

2014 Results/Findings: Jan-Dec 2014
Total Mismatches Identified 161
Antimicrobial Agents Changed 100 (62%)
Time to Mismatch Resolution 0.8 hours
(Note 50% Reduction in time to resolution from initiation of program)

Lessons Learned
- The clinical staff pharmacists were extremely successful with timely intervention to obtain physician orders for appropriate antimicrobial therapy
- Since implementation of the program in May 2012 approximately 60% of mismatch reports resulted in change in therapy and reduction in time to change to 0.8 hours.

Note
- The BID-Plymouth Microsensitivity Mismatch Program was recognized by the Massachusetts Society of Health-Systems Pharmacists and awarded the 2014 MSHP Hospital Pharmacy Dept of the Year Award