Transition of Care with Dalbavancin:
A Successful Cost-Saving Stewardship Program through Decreased Length of Stay

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Introduction

- Infectious Disease (ID) Antimicrobial Stewardship Program (ASP) started at Deaconess Hospital in November 2015.
- Prolonged length of stay (LOS) was identified by case management (CM), hospitalists and administration as concern, particularly for patients with:
  - Certain infections (skin/flexure, bone/joint) and
  - Placement issues for prolonged course of IV antibiotics
- Long-acting lipoglycopeptidines, such as dalbavancin, have advantages by allowing treatment with an IV antibiotic in patients who should not be discharged with a line.
- However, barriers to inpatient use of dalbavancin include:
  - Very high expensive drug cost with limited reimbursement; and
- Restriction in (our) health-system:
  - Initially, a multi-step permission process, including:
    - Clinical Pharmacy Coordinator
    - Chief Financial Officer
  - Later, a purchase block placed at the wholesaler level
  - The former process would delay discharge and the later restriction would remove an effective tool to decrease patients’ length of stay.
- While our outpatient infusion center closed in 2013 patients needing antibiotic infusions would come into our Cardiac Short Stay during week (no reimbursement).

Methods

- Timeframe: Dec 2015 to Jan 2017
- Patient cases for dalbavancin were preliminarily identified by CM, ED medical providers and hospitalists.
- Dalbavancin treatment plan required ASP/ID approval (then administrative permission- see above).
- Retrospective data collection included:
  - Age, gender
  - Current injection drug user (IDU)
  - Culture (organisms and susceptibilities)
  - Site of infection
  - Hospital course and treatment plan
  - Actual LOS
  - Estimated total LOS
  - Dalbavancin dosing regimen:
    - Inpatient
    - Outpatient
  - Cost savings (LOS minus drug):
    - Drug: 500 mg vial dalbavancin = $1,400
    - LOS = $1,000 cost of care/day

Cost Savings

- Cost of dalbavancin:
  - $1,400/500 mg vial x 49 vials = $68,600
- Cost of care - LOS: $1,000/day
- Total LOS was decreased by 270 days = $270,000
- Estimated savings: $200,000 for 17 patients

Length of Stay

- Savings: projected – actual LOS= 270 days!
- Decreased LOS total (mean; range):
  - ABSSTI: 77 (11; 5-22) days
  - Bone/joint: 186 (23; 9-34) days
  - Bacteremia (n=1): 7 days

Discussion

- Many of these patients would have had a prolonged LOS due to discharge plan challenges.
  - Due to dramatic demonstrated cost-savings mid 2016 ad hoc LOS eliminated our multi-step approval process and corporate reversed our wholesaler purchase block.
  - Limitations to cost calculations:
    - Drug acquisition cost alone (underestimation)
    - For-profit average cost inpatient day:
      - Washington State = $2,568
      - National = $1,791
      - So $1,000 (2015 dollars) might be:
        - Underestimation of Washington cost of care
        - Overestimation for cost for ABSSTI
      - Yet, LOS may have been longer if patient had complications (i.e. line infection, C. diff.)
- Not included in this analysis: 2 cases in ED-
  - dalbavancin use prevented an admission.
- In January 2017 a formal policy and procedure was developed for dalbavancin prescribing and administration- approval by ID/ASP only.
- Since January 2017 eight more patients received dalbavancin with similar results.

Conclusion

- For 17 patients (majority were IDUs) LOS was decreased by 270 days, saving @ $200,000!
- New policy and procedure helped standardize process (work-up, approval, administration and discharge plan).
- Findings were presented to pharmacy and hospital leadership as an example of a safe, effective, cost-saving ASP outcome.
- Return on investment: for every $1 spent on dalbavancin our hospital saved ~ $4 dollars on cost-of-care related to decreased length of stay.

References