### Saudi German Hospital

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# Applying value-based healthcare in the optimization of post-operative oral antibiotic prophylaxis

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#### Introduction:

Value-Based Health Care (VBHC) is an established strategic objective in SGH-Hail. In this context, the SGH-Hail has initiated a series of VBHC enabler initiatives starting with the Antimicrobial Stewardship Program. As part of its strategy, SGH-Hail considers applying value-based healthcare in optimizing post-operative oral antibiotic prophylaxis as a major objective in its plans. New recommendations for a shortened post-operative course of antimicrobials involving a single dose or continuation for less than 24 hours are provided per clinical practice guidelines for surgical antimicrobial prophylaxis. In Saudi German Hospital Hail, a challenge with oral antibiotics is prescribed for 5-7 days after surgery, regardless of the presence of infection. Postoperative continuation of antibiotic prophylaxis has been associated with antimicrobial resistance, Clostridioides difficile infection, and acute kidney injury. Increased awareness and education about best practices are needed among patients and practitioners, which would encourage stewardship efforts among surgeons.

#### Methodology:

A questionnaire was conducted for all surgeons in the branch to get the most common obstacles they face in implementing the project, response was %100. We had 4 target stakeholders: surgeons, patients, pharmacists, and medical directors. We conducted an orientation for surgeons and pharmacists about Clinical Practice Guidelines for Antimicrobial Prophylaxis in Surgery "ASHP 2013". Patient education flyers were made and distributed to all surgical patients. We obtained an internal MEMO from the medical director to stop dispensing unjustified antibiotics.

A total of 1440 surgical patients were included in our analysis. A retrospective review of records of 762 patients from July to November 2023 "before implementing the interventions" and, 678 patients from December 2023- April 2024 "after implementing the interventions" was conducted.

#### **Results**:

The primary outcome was the post-operative oral antibiotic prescription analysis. The secondary outcomes were the cost of unjustified antibiotics, the surgical site infection rate, and the re-admission rate due to surgical site infection. The presumed cost avoided during the project period was 54,119 SR per 1000 patients. Analysis of the data shows that there was no increase in the rate of surgical site infection.



Post-operative antibiotic duration compliance according to antimicrobial surgical prophylaxis guidelines



#### **Conclusion:**

The concept of value-based health care was applied in optimizing post-operative antibiotics resulting in cost utilization for patients or insurance companies. The expected outcome was achieved without unnecessary patient and insurance company costs. Analysis of the data shows that there was no increase in the rate of surgical site infection, and there was a reduction in the medical costs of treatment for the patients and the insurance companies.

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