

# Improving Pharmaceutical Services for Better Health Outcomes

Stewardship for Antibiotic Prophylaxis in  
Cesarean Section in Jordan



*Presenter*

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# Intervention Profile

- Improving antibiotic prophylaxis in cesarean section (CS) in three public sector hospitals by using medicine use evaluation technique
- Collaborating with multidisciplinary groups
- Developing hospital-specific protocol and procedures



- Implementing protocols by using continuous quality improvement (CQI) approach
- Measuring results through indicators

# Context and Challenges

About  $\frac{1}{3}$  to  $\frac{1}{2}$  of all antibiotics used in hospitals are for surgical prophylaxis, and 30% to 90% of this may be inappropriate<sup>(1)</sup>

## Problem in the local context:

- A JFDA study showed irrational use of antibiotics for prophylaxis during CS<sup>(2)</sup>
- Assessments<sup>(3)</sup> in the 3 participating hospitals showed:
  - Use of non-recommended antibiotics and use for incorrect duration
  - Inconsistent availability of antibiotics
  - Insufficient documentation of antibiotics ordered and administered
  - Increased risk of nosocomial infections secondary to delayed administration of the first dose
  - High cost of excess antibiotic administration

(1) Munckhof W. Antibiotics for surgical prophylaxis. Aust Prescr 2005; 28: 38-40;

(2) Jordan Food and Drug Administration. Rational antibiotic use in Jordan: auditing antibiotic use targeting surgical prophylaxis at Jordanian hospitals. JFDA, Rational Drug Use Department, 2009;

(3) [Gammouh S. and Joshi M. 2013. Improving Antibiotic Prophylaxis in Cesarean Section in Jordanian Hospitals: SIAPS Technical Report.](#)

# Benefits of the Approach

- Deliberate “systems thinking” approach that addressed all the core functions of the health system
- Support for antimicrobial resistance (AMR) containment through antibiotic stewardship
- Improved capacity and pharmaceutical care through team approach
- Institutionalization of the culture of CQI
- Improved sustainability through:
  - Integration of the approach within existing routine clinical practice
  - Enhanced capacity and coordination of various departments and committees
  - Use of simple and locally customized tools
  - Local ownership
  - Improved coordination between the participating hospitals and MOH

# Achievements<sup>(1)</sup>

Indicator	Result in 2012
Correct antibiotic use (cefazolin)*	86%**
Correct timing of first dose*	92%**
Correct number of doses*	88%**
Average cost for antibiotic prophylaxis per case	79% decreased compared to baseline
CS surgical site infection rate	1.59% (within international rate benchmark <sup>2</sup> )

\* **Baseline: 0% (2010)**

\*\* **In log-captured cases (log capture rate = 81%)**

(1) [Gammouh S. and Joshi M. 2013. Improving Antibiotic Prophylaxis in Cesarean Section in Jordanian Hospitals: SIAPS Technical Report.](#)

(2) [Ghuman M et al. Post-caesarean section surgical site infection: rate and risk factors. The New Zealand Medical Journal 2011; 124](#)

# Achievements, *cont.*

- **Institutionalization**
  - Mandate of a “unified” protocol for all MOH obstetrics and gynecology hospitals
- **Spillover effect**
  - Self-initiation of similar CS antibiotic prophylaxis programs by other hospitals
  - Expansion of the approach to another procedure (hernia)
- **Support for accreditation**
  - Contributed to HCAC’s NQS goal of “appropriate use of prophylactic antibiotic during surgery”

# Lessons Learned



Opportunities provided by the implementation of specific and discrete activities can be advantageously used to support wider health systems strengthening



Approaches that focus on system, design, process, CQI, and tracking of pre-agreed indicators support successful and sustainable change



Local stakeholders get motivated and coordinate to improve practice if supported with international and local evidence, locally contextualized approaches and tools, and follow-up technical support



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# Conclusion

Through this intervention in Jordan, SIAPS improved:

- **Pharmaceutical care** as a result of a common context and platform that the program offered for interdisciplinary spirit and collaboration
- Both **availability** of cefazolin and its **use** for antibiotic prophylaxis in CS for better patient outcomes
- **Governance** through locally developed protocols and tools to support well-coordinated, well-documented, transparent processes
- Local capacity to collect, analyze, and use **data** based on pre-agreed **indicators** to inform policies and practices
- **Antibiotic stewardship** and **obstetric care** in hospitals, contributing to MCH- and AMR-related national, USAID, and global goals



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The SIAPS logo consists of the word "SIAPS" in a bold, green, sans-serif font. To the right of the text is a stylized blue graphic of a person with arms raised in a 'V' shape, suggesting movement or achievement.



# Thank you



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