# Evaluation of Core Elements of Antimicrobial Stewardship Programs in Jordanian Hospitals

***Mera A. Ababneh[1*], Noor Issa[1], Mohammad Alkhatatbeh [1]***

[1] Department of Clinical Pharmacy, Faculty of Pharmacy, Jordan University of Science and Technology, Irbid, Jordan.

## ABSTRACT

This study aimed to assess the main core elements of Antimicrobial Stewardship Programs (ASPs) in Jordanian hospitals. This was a cross sectional study in which, face-to-face interview was conducted with infectious disease physician or clinical pharmacist in infectious disease unit. Forty-one hospitals responded to the survey (response rate 68%). Among participating hospitals, 17.1% had an infectious disease physician as a leader of ASP, while 73.2% had clinical pharmacist as a leader. However, none of the hospitals had financial statement that supports ASPs duties. Clinicians were the most cooperative staff (51.2%) and microbiologists were the least cooperative staff with ASPs team (17.1%). Antibiotics preauthorization was required by 75.6% of hospitals for few broad spectrum antibiotics, 36.6% of hospitals conduct prospective audit with feedback, and 9.8% change automatically from intravenous to oral route. For tracking purposes, 19.8% of hospitals track rates of Clostridium difficle infections, and 29.3% produce antibiograms for surveillance purposes. ASPs in Jordan are in the developing phase, this demands additional support at both institutional and national levels to enable the ASPs from taking its active role.

**Keywords**: Antimicrobial stewardship program, CDC, Antibiotics, Infectious disease physician, Preauthorization, Clinical Pharmacist, Jordan.

## 1. INTRODUCTION

Antimicrobial drug resistance problem is increasing worldwide. This issue is getting more complicated by the emergence of multidrug-resistance (MDR) organisms and the shortage of new effective treatment options against these resistant bacteria[1-4]. These threats have become real by the isolation of the "super bugs" that showed resistance to all types of antibiotics[5]. The current situation is demanding new methods related to improving antibiotic drug use in the clinical settings. Antimicrobial Stewardship Programs (ASPs) are evolving all over the world as one of the efficient methods to contain resistancecrisis. An ASP is a set of collaborative activities focusing on the proper use of antimicrobials to provide most favorable patient clinical outcomes, minimize adverse effects, endorse cost-effectiveness, decrease in the incidence of *Clostridium difficle* infections, and management of resistance crisis[6-11]. In Jordan there is a need to encourage and support such programs that regulate antibiotic usage, given the high percentage of antibiotic misuse at community and hospital levels[12-15].

The aim of this study was to evaluate core elements of ASPs according to the Centers for Disease Control and Prevention (CDC) in Jordanian hospitals.

**Methods:**

Study Settings

This was a cross sectional survey in hospitals of the Jordanian governorates. Hospitals with bed- size capacity of 50 beds and more were included, while single specialty hospitals (e.g. oncology, psychiatry, and gynecology) were

* mababneh@just.edu.jo

Received on 30/11/2016 and Accepted for Publication on 26/3/2017.

 

excluded. As a result, sixty hospitals were approached. A face-to-face interview conducted with the infectious diseases (ID) physician or clinical pharmacist in the infectious diseases team using a questionnaire. To assess the implantation of ASP in Jordanian hospitals, the CDC's checklist of ASP core elements, which is composed of twenty eight (yes or no) questions, was used. The questions addressed the following issues: leadership commitment, accountability, drug expertise, action, tracking, reporting, and education.[16] The research was approved by the research ethics committee (approval number:) in each participating hospital and CDC's approval for using their checklist was also obtained.

Statistical analysis: Descriptive statistics (counts and proportions) were used to describe the core elements of ASPS in Jordanian hospitals. Statistical analysis will be conducted by using Statistical Package for Social Sciences (SPSS) software version 20.

**Results:**

Hospital Demographics

Forty one hospitals (41/60, 68%) responded to the survey questionnaire. In 9 (22%) hospitals an ID physician or medical director answered the questionnaire, while in 32 (78%) hospitals clinical pharmacist answered the questionnaire.

Among participating hospitals, 18 (43.9%) were public, 19 (46.3%) were private, 2(4.9%) were academic, and 2 (4.9%) were military hospitals. Hospitals distribution according to geographical location was as follows: sixteen hospitals (39%) were located in the North, 20 (48.8%) hospitals were located in the Middle and five hospitals (12.2%) were located in the South. In addition, 13 (32%) hospitals' bed-size ranged from 50 up to 100 beds, while 24 (58%) hospitals were from 100 beds up to 500 beds, and 4 (10%) hospitals were exceeded 500 beds.

**Core elements of antimicrobial stewardship program in Jordanian hospitals**

Table 1 provides a complete description of the survey results for each of the seven core elements included in the study.

*Leadership commitment*

From analyzing the data it was found that 21(51.2%) hospital had formal statement that regulates antibiotic use, while none of these hospitals had financial budget that support activities needed to improve antibiotic usage.

*Accountability*

The results of this study revealed that only 7 (17.1%) hospitals had an ID physician as a leader responsible for program outcomes of stewardship activities at their facility, while 30 (73.2%) hospitals had clinical pharmacist as a leader.

*Drug Expertise*

According to survey respondents, clinicians were the most corporative staff with the ASPS team members (21, 51.2%), followed by infection prevention and healthcare epidemiology (14, 34%), quality improvement staff work (11. 26.8%), information technology support (8, 19.8%), and microbiology department (7, 17.1%).

*Action*

Thirty hospitals (73.2%) had formal regulation of prescription of an antibiotic, in which the prescription should contain the dose, duration, and indication for this antibiotic. Even though there were policies for writing the prescriptions of antibiotic, only 19 (46.3%) hospital had set up specific treatment recommendations according to national guidelines or local susceptibility.

Regarding broad interventions to improve antibiotic usage, 26 (63.4%) hospitals check the appropriateness of antibiotic after 48 hr from order, 31 (75.6%) hospitals had list of antibiotics that requires preauthorization by specialist. The list mainly consist of broad spectrum antibiotics: 13 (31.7%) hospital list colistin which requires special preauthorization as last resort antibiotic, 14 (34.1%) hospitals request preauthorization for vancomycin, 19 (46.3%) hospitals list any carbapenem in preauthorization antibiotics. Only 15 (36.6%) hospitals perform prospective audit with feedback where the ASPS team review the course of therapy for the restricted antibiotic.

**Table 1. Core elements of Antimicrobial Stewardship Programs in 41-Jordaninan hospitals.**

| **Elements** | ***n*** | **%** |
|---|---|---|
| **Leadership commitment** | | |
| Formal statement for improving antibiotic usage. | 21 | 51.2% |
| Financial budget that support duties of ASP*. | 0 | 0 |
| **Accountability** | | |
| Infectious disease physician as a leader | 7 | 17.1% |
| Clinical pharmacist as a leader | 30 | 73.2% |
| **Drug Expertise:** Staff corporation with stewardship leaders to improve antibiotic use: | | |
| Clinicians | | |
| Information Technology (IT) | 21 | 51.2% |
| Infection Prevention and Healthcare Epidemiology | 8 | 19.8% |
| Microbiology (Laboratory) | 14 | 34% |
| Quality Improvement | 7 | 17.1% |
| | 11 | 26.8% |
| **Action** | | |
| Writing prescription of antibiotic (dose, duration, and indication ) | 30 | 73.2% |
| Facility-specific recommendations, based on national guidelines. | 19 | 46.3% |
| Review appropriateness of antibiotics within 48 hours | 26 | 63.4% |
| Antibiotic agents need preauthorization by a physician or pharmacist. | 31 | 75.6% |
| Review courses of therapy for specified antibiotic agents. | 15 | 36.6% |
| Dose adjustments in case of organ dysfunction | 40 | 97.6% |
| Dose optimization of organisms with reduced susceptibility | 35 | 85.4% |
| Automatic alert system in cases of unnecessarily duplication of antibiotics. | 14 | 34.1% |
| Time-sensitive automatic stop orders for specified antibiotic prescriptions | 19 | 46.3% |
| Specific interventions in place to ensure optimal use of antibiotics to treat common infections | 11 | 26.8% |
| **Tracking** | | |
| Monitor adherence to a documentation policy | 16 | 39% |
| Monitor adherence to facility-specific treatment recommendations | 19 | 46.3% |
| Monitor compliance with interventions | 4 | 9.8% |
| Track rates of *C. difficle* infection | 8 | 19.5% |
| Surveillance cultures included in the antibiogram | 12 | 29.3% |
| Monitor antibiotic consumption by DOT* | 1 | 2.4% |
| Monitor antibiotic consumption by DDD* | 4 | 9.8% |
| Monitor antibiotic consumption by direct expenditure. | 18 | 43.9% |
| **Reporting** | | |
| Sharing of specific reports on antibiotic use with prescribers | 16 | 39% |
| Distribution of hospital's current antibiogram to prescribers | 7 | 17.1% |
| Direct or personalized communication with prescribers to improve antibiotic use | 32 | 78% |
| **Education** | | |
| ASP provide education to clinicians and relevant staff ton improving antibiotic prescribing | 29 | 70.7% |

*ASP: Antimicrobial Stewardship Program, DOT: Days of Therapy, DDD: Defined Daily Dose.

In concern of pharmacy interventions in hospitals, only 4 (9.8%) hospitals change automatically from intravenous to oral antibiotic when appropriate, 40 (97.6%) hospitals adjust dose due to organ dysfunction, 35 (85.4%) hospitals reported that there staff will change antibiotic according to susceptibility tests. Computerized systems to alert physicians in cases of unnecessarily duplication of antibiotics were available in 14 (34.1%) hospitals, and time-sensitive stop orders for specific antibiotic prescriptions were available in 19 (46.3%) hospitals.

Regarding the specific interventions for common infections; it was found that 11 (26.8%) of hospitals had some interventions in their facility.

*Tracking*

Nineteen (46.3%) hospitals had specific treatment recommendations for specific infections however, only 4 out of the 19 hospitals monitor adherence to these recommendations and monitor compliance to these recommendations. In tracking antibiotic use and outcome measures in hospitals, analysis revealed that 8 (19.5%) hospitals track the rates of *Clostridium difficle* infections, 12 (29.3%) hospitals release antibrograms, one (2.4%) hospital use Days of therapy (DOT) to track antibiotic usage, 4 (9.8%) hospitals use Defined Daily Dose (DDD) to track antibiotic consumption, and 18 (43.9%) measure consumption of antibiotics by direct expenditure.

*Reporting*

Analyzing the data revealed that 16 (39%) hospitals share reports about antibiotic usage in the hospital, while only 7 (17.1%) hospitals had distributed current antibiogram for the team, and 32 (78%) of hospitals communicate with physician in order to improve antibiotic prescription

*Education*

Educating the staff in hospitals in order to improve antibiotic prescriptions was found in 29 (70.7%) hospitals through lectures.

**Discussion:**

This study evaluated the magnitude of antimicrobial stewardship programs implementation in Jordanian hospitals using CDC's core elements of ASPS. Despite the fact that none of the participating hospitals had implemented the entire core elements of ASPS specified by CDC's in their facility, many hospitals covered some of these elements.

This study observed half of the private sector hospitals to had formal statements as part of their policies; however, the percentage was lower in governmental hospitals. Financial budget is required to start the ASPS[17-20]. Nevertheless, none of the Jordanian hospital had financial budget for improving antibiotic usage, even in hospitals that had all the other core elements of ASPS applied in their facility. The lack of financial support for ASPS activities is one of the main barriers that face implementation of ASPS in any facility[21].

Regarding the accountability and drug expertise, studies emphasized the importance of these core elements in improving antibiotic usage. A leader, mainly ID physician (full time or part time) is required for coordinating the work and reporting the clinical outcomes of ASP programs.[17,20,22] Among all participating hospitals, there were only seven hospitals with ID physicians working as leader in stewardship program. The shortage in ID physicians is leading hospitals to rely on clinical pharmacists to improve antibiotic usage in hospital settings in addition to their job duties.

One of the obstacles that face implementation of ASPS in hospitals is staff cooperation[23]. The low percentage of staff cooperation with interventions that improve antibiotic usage reported in this study was similar to previous studies[20, 23].

At present study, most hospitals (75%) focus on specific antibiotics preauthorization to conduct ASPs despite the shortage in ID specialists. Studies have showed the tremendous effect of preauthorization on the decrease in antibiotic usage[6,7,11]. Previous studies emphasized the importance of having national guidelines according to local susceptibilities results[24]. Implementations of such guidelines in hospitals were responsible for significant reduction in DDD of antibiotics, decrease in duration of antibiotics usage, improving the appropriateness of treatments, and significant reduction in mortality rates[25-27]. This study found that only half of the hospitals had national treatment recommendations for common clinical conditions; mainly for antibiotics in surgical prophylaxis. These guidelines were available in governmental hospitals in higher percentage compared to private hospitals. Development of these national guidelines requires collaboration between hospital specialists and administrative staff. Also, it needs active

educational programs. Guidelines and educations can be considered the cornerstone for the starting any ASP[28].

Pharmacy driven interventions are responsible for converting IV antibiotic to oral, renal/hepatic dose adjustment, preventing antibiotic duplication, and accountable for time-sensitive stop of antibiotics. These interventions can be a good starting for ASPS in hospitals even in the absence of an ID physician[6,29, 30]. This study showed minimal application of automatic changes from IV to oral routes, and automatic systems for duplicates alerts, however, there was an obvious role in dose optimization according to organ dysfunction and bacterial cultures. One of the main reasons that contribute to this low percentage in pharmacy interventions is the lack of proper knowledge about antimicrobial stewardship programs, which highlight importance of additional educational programs about ASPS, antimicrobial use, and the need of proper infectious disease courses in hospitals[31-33].

Tracking and reporting provide the facility with indicators for antibiotic prescribing practice, and the outcomes of antimicrobial stewardship programs in the facility[17,34]. In this current investigation, there was noticeable lack of knowledge and use of DOT and DDD methods. Most hospitals depend on purchasing cost for other purpose than prescribing practice in their facility. Sharing reports with prescribers about antibiotic usage and yearly antibiogram, or by receiving direct communication with clinical pharmacist was found to improve antibiotic prescribing patterns[20]. This study revealed that there was weakness in reporting, especially, in distributing antibiogram to the staff, nevertheless high percentage of physician communicates with pharmacist in order to improve antibiotic prescriptions.

Educational lectures for the clinicians and staff about antibiotic were the only methods of education reported; further educational programs are required in order to fill the gap of knowledge about antibiotic resistance, antibiotic usage, and the positive influence of ASPS on patient health[10,24]. When comparing Jordan to other countries in the region, it is estimated that Jordan is heading to the right track facing the same barriers like other countries. A cross sectional study included Gulf Coorperation Council (GCC) hospitals estimated the lack of funding for ASP as a major barrier for their implantation (75%).[35] This is the first study evaluated the current status of ASPS implantation in Jordanian hospitals. Many of the core elements of ASPS were not applied, primarily, lack of leadership commitment, shortage of ID physicians, and limited cooperation between departments of hospital (microbiology, quality improvement, and pharmacy) regarding improving antibiotic use. Moreover, there is a need for protocols that regulate antibiotics usage, and personnel that monitor and reports adherence to these protocols in the facility. Continuous educational programs are required for staff for updating their knowledge about antibiotic, trends of resistance, and last guidelines for infections.

**Acknowledgments:**

We would like to acknowledge CDC for the approval for using their checklist of ASPS core elements.

***Ethical approval:*** The institutional review boards at participating hospital approved the study (27/94/2016).

***Source of Funding:*** This study was supported by a grant from the Deanship of Research at Jordan University of Science and Technology, Irbid, Jordan.

## REFERENCES

(1) Centers For Disease Control And Prevention (CDC). Antibiotic resistance threats in the United States, 2013. Atlanta: *CDC*; 2013. Available from: http://www.cdc.gov/drugresistance/threat-report-2013/pdf/ar-threats-2013-508.pdf

(2) European Centre For Disease Prevention and Control (ECDC) Antimicrobial resistance surveillance in Europe 2013. Annual Report of the European Antimicrobial Resistance Surveillance Network (EARS-Net). Stockholm *ECDC*. Available from: http://ecdc.europa.eu/ en/publications/publications/antimicrobial-resistance-europe-2014.pdf

(3) Magiorakos, A. P., Srinivasan, A., Carey, R., Carmeli, Y., Falagas, M., Giske, C., Harbart, et al. Multidrug-resistant, extensively drug-resistant and pandrug-resistant bacteria: an international expert proposal for interim standard definitions for acquired resistance. *Cli Mircrobio Infect* . 2012; 18, 268-281.

(4) Laxminarayan, R., Duse, A., Wattal, C., Zaidi, A. K., Wertheim, H. F., Sumpradit, N., et al. Antibiotic resistance-the need for global solutions. *Lancet Infect Dis*. 2013; 13, 1057-1098.

(5) Mcgann, P., Snesrud, E., Maybank, R., Corey, B., Ong, A. C., Clifford, R., et al. Escherichia coli Harboring mcr-1 and blaCTX-M on a Novel IncF Plasmid: First report of mcr-1 in the USA. *Antimicrob Agent Chemother*. 2016; 60(7):44.

(6) Brink, A. J., Messina, A. P., Feldman, C., Richards, G. A., Becker, P. J., Goff, D. A., et al. Antimicrobial stewardship across 47 South African hospitals: an implementation study. *Lancet Infect Dis*. 2016; 16, 1017-1025.

(7) Diazgranados, C. A. Prospective audit for antimicrobial stewardship in intensive care: impact on resistance and clinical outcomes. *Am J Infect Control*. 2012; 40, 526-529.

(8) Doernberg, S. B., Dudas, V. and Trivedi, K .K. Implementation of an antimicrobial stewardship program targeting residents with urinary tract infections in three community long-term care facilities: a quasi-experimental study using time-series analysis. *Antimicrob Resist Iinfect Control*. 2015; 1,4:54.

(9) Feazel, L. M., Malhotra, A., Perencevich ,E. N., Kaboli, P., Diekema, D. J. & Schweizer, M. L. Effect of antibiotic stewardship programmes on Clostridium difficile incidence: a systematic review and meta-analysis. *J Antimicrob Chemother*. 2014; 69 (7): 1748-54.

(10) Fishman, N. Policy statement on antimicrobial stewardship by the Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), and the Pediatric Infectious Diseases Society (PIDS). *Infect Control Hosp Epidemiol*. 2012; 33, 322-327.

(11) Malani, A. N., Richards, P. G., Kapila, S., Otto, M. H., Czerwinski, J. & Singal, B. Clinical and economic outcomes from a community hospital's antimicrobial stewardship program. *Am J Infect Control*. 2013; 41, 145-148.

(12) Al-Azzam, S. I., Alzoubi, K. H., Mhaidat, N. M., Haddadin, R. D., Masadeh, M. M., Tumah, et al. Preoperative antibiotic prophylaxis practice and guideline adherence in Jordan: a multi-centre study in Jordanian hospitals. *J Infect Develop Countr*. 2012; 6, 715-720.

(13) Al-Bakri, A. G., Bustanji, Y. and Yousef, A.M. 2005. Community consumption of antibacterial drugs within the Jordanian population: sources, patterns and appropriateness. *Int J Antimicrob Agent*. 2005; 26, 389-395.

(14) Al-Momany, N. H., Al-Bakri, A. G., Makahleh, Z. M, Wazaify, M. M. Adherence to international antimicrobial prophylaxis guidelines in cardiac surgery: a Jordanian study demonstrates need for quality improvement. *J Manag Care Pharm*. 2009; 15, 262-271.

(15) Al-Niemat, S. I., Bloukh, D. T., Al-Harasis, M. D., Al-Fanek, A. F. and Salah, R. K. Drug use evaluation of antibiotics prescribed in a Jordanian hospital outpatient and emergency clinics using WHO prescribing indicators. *Saudi Med J*. 2008; 29, 743-748.

(16) Centers For Disease Control and Prevention (CDC). Core Elements of Hospital Antibiotic Stewardship Programs(Online). 2014: Department of Health and Human Service *CDC* Available:http://www.cdc.gov/getsmart/healthcare/implementation/core-elements.html

(17) Pollack, L. A. and Srinivasan, A. Core elements of hospital antibiotic stewardship programs from the Centers for Disease Control and Prevention. *Clin Infect Dis*. 2014; 59, S97-S100.

(18) Sick, A. C., Lehmann, C. U., Tamma, P. D., Lee, C. K., Agwu, A. L. Sustained savings from a longitudinal cost analysis of an internet-based preapproval antimicrobial stewardship program. *Infect Control Hosp Epidemiol*. 2013;34, 573-580.

(19) Standiford, H. C., Chan, S., Tripoli, M., Weekes, E.,

Forrest, G. N. Antimicrobial stewardship at a large tertiary care academic medical center: cost analysis before, during, and after a 7-year program. *Infect Control Hosp Epidemiol*. 2012; 33, 338-345.

(20) Dellit, T. H., Owens, R. C., Mcgowan, J. E., Gerding, D. N., Weinstein, R. A., Burke, J. P.,et al. Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America guidelines for developing an institutional program to enhance antimicrobial stewardship. *CID*. 2007; 44, 159-177.

(21) Johannsson, B., Beekmann, S. E., Srinivasan, A., Hersh, A. L., Laxminarayan, R. & Polgreen, P. M. Improving Antimicrobial Stewardship The Evolution of Programmatic Strategies and Barriers. *Infect Control Hosp Epidemiol* . 2015; 32, 367-374.

(22) Nilholm, H., Holmstrand, L., Ahl, J., Månsson, F., Odenholt, I., Tham, J., et al. An audit-based, infectious disease specialist-guided antimicrobial stewardship program profoundly reduced antibiotic use without negatively affecting patient outcomes. *Open Forum Infect Dis*. 2015; 23; 2 (2):ofv042.

(23) Yam, P., Fales, D., Jemison, J., Gillum, M., Bernstein, M. Implementation of an antimicrobial stewardship program in a rural hospital. *Am J Health Syst Pharm*. 2012;69, 1142-8.

(24) Tamma, P. D. and Cosgrove, S. E. Antimicrobial Stewardship. *Infect Dis Clin North Am*. 2011; 25, 245-260.

(25) Capelastegui, A., España, P. P., Quintana, J. M., Gorordo, I., Ortega, M., Idoiaga, I., et al. Improvement of process-of-care and outcomes after implementing a guideline for the management of community-acquired pneumonia: a controlled before-and-after design study. *Clin Infect Dis*. 2004; 39, 955-963.

(26) Toth, N. R., Chambers, R. M., Davis, S. L. Implementation of a care bundle for antimicrobial stewardship. *Am J Health Syst Pharm*. 2010; 67, 746-749.

(27) Slekovec, C., Leroy, J., Vernaz-Hegi, N., Faller, J.P., Sekri, D., Hoen, B., et al. Impact of a region wide antimicrobial stewardship guideline on urinary tract infection prescription patterns. *Int J Cli Pharm*. 2012; 34, 325-329.

(28) Macdougall, C. & Polk, R. E. Antimicrobial stewardship programs in health care systems. *Clin Microbiol Rev*. 2005; 18, 638-56.

(29) Magedanz, L., Silliprandi, E. M., Dos Santos, R. P. Impact of the pharmacist on a multidisciplinary team in an antimicrobial stewardship program: a quasi-experimental study. *Int J Clin Pharm*, 2012; 34, 290-4.

(30) Waters, C. D. Pharmacist-driven antimicrobial stewardship program in an institution without infectious diseases physician support. *Am J Health Syst Pharm*. 2015; 72, 466-8.

(31) Burger, M., Fourie ,J., Loots, D., Mnisi, T., Schellack, N., Bezuidenhout, S. Knowledge and perceptions of antimicrobial stewardship concepts among final year pharmacy students in pharmacy schools across South Africa. *Afr J Infect Dis*. 2016;31, 84-90.

(32) Crader, M. F. Development of antimicrobial competencies and training for staff hospital pharmacists. Hosp Pharm. 2014; 49, 32-40.

(33) Justo, J. A., Gauthier, T. P., Scheetz, M. H., Chahine, E. B., Bookstaver, P. B., Gallagher, J. C.,et al. Knowledge and Attitudes of Doctor of Pharmacy Students Regarding the Appropriate Use of Antimicrobials. CID. 2014; 59, S162-S169.

(34) Doron, S., Davidson, L. E. Antimicrobial Stewardship. *Mayo Clin Proc*. 2011; 86 (11): 1113-23.

(35) Enani, M. A. The antimicrobial stewardship program in Gulf Cooperation Council (GCC) states: insights from a regional survey. *Journal of Infection Prevention*, 2016; 17 (1), 16–20. http://doi.org/10.1177/1757177415611220

# تقييم العناصر الأساسية لبرنامج الإشراف على المضادات الحيوية في مستشفيات الأردن

***ميرا عبابنة، نور عيسى، محمد خطاطبة[1]***

[1] كلية الصيدلة، جامعة العلوم والتكنولوجيا الأردنية، اربد، الأردن.

## ملخص

هدفت هذه الدراسة إلى تقييم العناصر الأساسية لبرامج الإشراف على المضادات الحيوية في المستشفيات الأردنية. في هذه الدراسة، تم إجراء مقابلة واستبيان مع ممثلي برنامج الإشراف على المضادات الحيوية في المستشفيات لتقييم العناصر الأساسية المتبعة ومدى تطبيق السياسات للحد من الإفراط في استخدام المضادات الحيوية. قبل ما مجموعه 41 مستشفى المشاركة في هذه الدراسة. بينت الدراسة أن لا أحد من المستشفيات الأردنية لديها دعم مادي للبرنامج والذي يعد من الأساسيات الواجب توافرها لنجاح البرنامج في المستشفيات، في حين أن 7 (17.1٪) من المستشفيات لديها اختصاصي الأمراض المعدية. ومن ناحية أخرى 30 من المستشفيات (73.2٪) ضمن كادرهم صيدلاني سريري أو أكثر يعمل على تحسين استخدام المضادات الحيوية. وفيما يتعلق السياسات ولإجراءات أكثر من نصف المستشفيات لديها سياسات وإجراءات من أجل تنظيم استخدام المضادات الحيوي خمس وسبعون بالمئة من المستشفيات تطبق نظام التفويض المسبق لاستخدام المضادات الحيوية ذات التغطية الواسعة. هذه الدراسة هي أول دراسة في الأردن فيما يتعلق ببرامج إدارة المضادات الحيوية في مستشفياتهم. وأظهرت هذه الدراسة الحاجة إلى زيادة الوعي فيما يتعلق بالمقاومة للمضادات الحيوية وأهمية تنفيذ البرامج التي تنظم استخدام المضادات الحيوية في المستشفيات الأردنية. الواقع أن بعض المستشفيات قد طبقت بعض العناصر الأساسية في مستشفياتهم ولكن لم نجد أيا من المستشفيات لديها التزام من الإدارة فيما يتعلق بهذه البرامج. إجراء المزيد من الدراسات من أجل تقديم أدلة لنظام الرعاية الصحية حول أهمية هذه البرامج وأثرها هو المطلوب في سبيل تحسين جودة الرعاية الصحية المقدمة للمرضى في مستشفيات الأردن.

**الكلمات الدالة:** برنامج الإشراف، المضادات الحيوية، الأردن.

---

تاريخ استلام البحث 2016/11/30 وتاريخ قبوله للنشر 2017/3/26.