



Research Article

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National Pharmacy Pain Management Program at Ministry of Health in Saudi Arabia



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Abstract

Over short of time, the General Administration of Pharmaceutical Care established several pharmacy practice programs based on patient demand, preventing drug misadventures, and poor health care provider's knowledge and perception and national and international hospital pharmacy accreditation's requirements. National pain management program was among them. The system initially started in the 2000s in Saudi Arabia, and the first program at Ministry of Health hospital stated in 2008, and then become national program in 2013. The program had astrategic plan, and policy and procedures, with Key performance indication to measure the implementation of the program. The program prevents drug misuse and avoid additional economic burden on health care system in Saudi Arabia

Keyword: Pain Management; Pharmaceutical care; Pharmacy; Ministry of Health; Saudi Arabia

Introduction

The history of starting pain management services in Saudi Arabia is not clear. However, may be the first hospital started the program at Armed forced hospital in 1994. The clinical audit study from 1994-2003 and more 10,000 patients described the acute pain services at the hospital [1]. The pain management clinic established at Jeddah teaching hospital in January 2000 and provided the services through the year of 2004 [2]. In 2008, the hospital director of the biggest hospital at Ministry of Health (1400 beds) assigned the author as a head of regional drug information center. The author established the infrastructure of all clinical services including but not limited to the following poisoning control services, anticoagulation program, pharmacokinetics services, oncology pharmacy services, Surgical and Orthopedic pharmacy services, pharmacoeconomic program, and pain management program [3]. The pain management program activated at the same hospital in 2010. The program consisted of goal and objectives, the job description of a pain management clinical pharmacist, policy and procedures of pain management services, pain management guidelines. The local hospital committee founded and headed by the director of aesthetics department, coordinated by trained pain management clinical pharmacist, and membership representative of the

surgical, medical department, pediatrics development, nursing department, and quality management departments. The pain management guidelines designed as physician order form; both adult acute, and chronicpain management. Each type of pain treatment list medication based on MOH formulary. The options list made as first-line therapy, second choice, and last line therapy.

The medications chosen based on update guidelines of adult's pain management, updated literature and pharmacoeconomic based. If the treating doctors wish to choose another option, he has to write the justification on that. All physician formats approved by a local hospital of pain management. Also, the committee formulated the pain management team contained anesthesiologist, nurse, and pain management clinical pharmacist. They do daily around five days per a week for post-operative patients, and consultation received from different departments at the hospital. The pharmacist should follow the adherence of the program, recommended the appropriate drug therapy based individual patient, and follow up and document any drug-related problems, thus correct them accordingly. Measurement patient quality of life and a cost impact required from clinical pharmacist. The program continued until 2012.

Pharmacy Pain Management Program

The demand for pain management program is very high in Kingdom of Saudi Arabia. The program required for hospital accreditation process at national and international accreditation institutions [4-5]. The pain management medication is underutilization in Saudi Arabia. In a study at teaching hospital in Riyadh city, the authors found with 160 oncologic patients 40% of whose suffered from pain not given any medication for pain while more 50% of then received inappropriate painkiller [6]. Also, the background of medical doctor or pharmacists or nurses showed poor knowledge and negative perception toward pain management medication during studentship [7-9]. The author not familiar with any published literature at in Saudi Arabia, and Gulf countries or the Middle East described national pharmacy pain management program

National Pharmacy Pain Management Program in Kingdom Of Saudi Arabia

In late 2012, the author promoted to General Manager of Pharmaceutical care. The author and his administration revised

the general plan of MOH 2010-2020, updated the general plan of pharmaceutical care, and founded more thirty pharmacy practices and clinicalpharmacy program. Pain management services were one of them [10-13]. The author established a new central committee of pain management consisted of representing twenty regions over all the kingdom of Saudi Arabia. The committee updates all policy and procedures of previous hospital pain management, update the physician orders format, all related thing of the program. The member shared in designing Saudi clinical guidelines treatment of skill cell disease. The central committee established a plan for next five years as explored in (Table 1). The central committee started strategic plan over a five-year period, and the program beganwith nine hospitals then expanded to different regions as explored in (Table 2). The central committee founded key performance indicators to follow up the implementation of the program as shown in (Table 3), and the effective day of applying pain management at all MOH health care institution was on 4 September 2012 by a memorandum sent by General Manager of Pharmaceutical care.

Table 1: Type of Pharmacy pain management committees.

	Membership	Functions	Frequently meeting	Reporting
Central Pharmacy Pain Management Committee				
1	1. National Clinical Pharmacy as head f the committee 2. Pain management clinical pharmacist coordinator 3. Pain management clinical pharmacist from each twenty regions	1. Establish of national pharmacy pain management program at MOH hospitals 2. Setup strategic planning of national pharmacy pain management stewardship program at MOH institutions 3. Follow up and update of national pharmacy pain management stewardship programat MOH hospitals 4. Implement and Follow-upnational pharmacy pain management stewardship committee at MOH hospitals 5. Setup up policy and procedures of national pharmacy pain management stewardship program at MOH institutions 6. Setup and implement national pharmacy pain management stewardship program key performance indicators at MOH institutions 7. Review all reports of national pharmacy pain management stewardship program from all MOH institutions	Monthly	Every three months
Hospital Pain Management Committee				
2	1. Consultant Anesthesiology or Intensivist or chief of pharmacy as head of the committee 2. Internal Medicine Physician 3. Surgeon 4. Emergency physician 5. Pediatrician 6. MD of obstetrics and gynecology 7. Nurse 8. Chief of Clinical Pharmacy Department 9. Drug Information Center pharmacist 10. Psychologist 11. Physiotherapist 12. Social Service	1. Supervise the implementation of pain management program at the hospital 2. Supervision of program activation, program follow-up, program Evaluation, and program development at the hospital. 3. Approval of the pain management team members 4. Review and update pain management protocol at least annually 5. Review the job description, policy, and procedures of pain management team 6. Supervising of pain management clinic 7. Examine the pain program needs of equipment and medical supplies,...etc 8. Submit reports on the progress of the Commission’s work and the team and its effectiveness for patients and health team every three months central pain management committee	Monthly	Every three months

Pain Management team				
3	<p>The team consists of</p> <ul style="list-style-type: none"> • From an Anesthesiology or intensive care or pain management clinical pharmacist. • Pain management clinical pharmacist pain • Pain Management Nurse pain. <p>The pain management program begins with postoperative patients. All other types of pain at the request of the consulting pain management team. The services expand coverage to all patients in the institutions, and maybe need more than one team to cover patients as needed.</p>	<ol style="list-style-type: none"> 1. The daily round all patients suffering from pain. 2. Operate hospital pain clinics. 3. Provide counseling for pain management. 4. Apply the pain management protocol at hospital 5. Follow up the pain management patient and resolve the drug related problem 6. Measure patient outcomes, quality of life, and cost avoidance 7. Receive any pain management consultation from any treating teams at the hospitals 	Daily	Monthly

Table 2: Strategic plan of pharmacy pain management program.

	Elements of the plan	
2014		
Stage 1	<p>Establish the central national pharmacy pain management Committee Central at Ministry of Health</p> <p>Set the national pharmacy pain management Committee at twenty Region</p> <p>Set the national pharmacy pain management Committee at Peripheral ninety Hospital</p> <p>Implement of national pharmacy pain management program at ninety Hospital</p> <p>Establish the adults pain management physician order sheet booklet and distribute it to all hospitals</p>	<p>Establish the adults Pain Management physician order as computerized physician order entry (CPOE) with implementation at fifty hospitals</p> <p>Deliver the pharmacy pain management training Courses at MOH</p> <p>Deliver the pharmacy pain management courses for twenty regions</p>
2015		
Stage 2	<p>Follow-up the hospital pain management committee at ninety Hospital</p> <p>Follow up the implementation of pain management program with previous ninety Hospital</p> <p>Establish of pain management committee at new ninety Hospital</p> <p>Design pediatrics pain management physician order sheet booklet and distribute it to all hospitals</p> <p>Design the Pediatrics pain management physician order as CPOE and apply it at fifty hospitals</p>	<p>Revise and update adults pain management physician order sheet booklet and distributed to all hospitals</p> <p>Revise and update adults pain management physician order as CPOE and apply it at fifty hospitals</p> <p>Review of adults pain management guidelines utilization</p> <p>Review adults pain management medications consumption</p> <p>Deliver the adults pain management training Courses at MOH</p> <p>Deliver the adults pain management training courses for twenty regions</p>
2016		
Stage 3	<p>Follow-up of Pain Management Committee at Peripheral previous 180 Hospital</p> <p>Follow up the Implementation of Pain Management program at previous 180 Hospitals</p> <p>Establish of pain management committee at new ninety hospitals</p> <p>Revise and update adults and pediatrics pain management physician order sheet booklet and distribute it to all hospitals</p>	<p>Revise and update adults and pediatrics pain management physician order as CPOE and apply it at fifty hospitals</p> <p>Review of Adults and Pediatrics pain management guidelines utilization</p> <p>Review Adults and Pediatrics pain management medications consumption</p> <p>Delivery of Adults and Pediatrics pain management training Courses at MOH</p> <p>Delivery of Adults and Pediatrics pain management training courses for twenty regions</p>
2017		
Stage 4	<p>Follow-up of pain management committee at previous 270 Hospital</p> <p>Follow up the Implementation of pain management program at previous 270 Hospital</p> <p>Establish of Adults and Pediatrics pain management committee and program at new peripheral ninety private Hospitals</p> <p>Revise and update adults and pediatrics pain management physician order sheet booklet and distribute it to all hospitals</p> <p>Revise and update adults and pediatrics pain management physician order as CPOE and apply it at fifty hospitals</p>	<p>Review of Adults and Pediatrics pain management guidelines utilization</p> <p>Review Adults and Pediatrics pain management medications consumption</p> <p>Deliver the Adults and Pediatrics pain management training Courses at MOH and private sector</p> <p>Deliver the Adults and Pediatrics pain management training courses for twenty regions and private sector</p>

2018		
Stage 5	<p>Follow-up of pain management committee at peripheral previous 270 MOH hospital and 90 private hospitals</p> <p>Follow up the implementation of pain management program at previous 270 hospital and 90 private hospitals</p> <p>Establish of Adults and Pediatricspain management committee and program at new peripheral ninety private Hospitals</p> <p>Revise and update adults and pediatrics Pain Management physician order sheet booklet and distribute it to all MOH hospitals and private sector</p>	<p>Revise and update adults and pediatrics pain management physician order as CPOE and apply it to MOH hospitals and private sector</p> <p>Review of Adults and Pediatrics pain management guidelines utilization at MOH hospitals and private sector</p> <p>Review Adults and Pediatrics pain management medications consumption at MOH hospitals and private sector</p> <p>Delivery the Adults and Pediatrics pain management training Courses at MOH and private sector</p> <p>Delivery the Adults and Pediatrics pain management training courses for twenty regions and private sector</p>

Table 3: Hospital Pain Management Program Key Performance Indicators.

Hospital Pain Management Program Key Performance Indicators						
No	Indicator Name	Indicator Description	Indicator Formula (if exists)	Target	Indicator Frequency	Example of Compliance (2014)
Leadership and Management						
1	Central Pain Management Committee	% Pain Management Committee meeting	No Pain Management Committee meeting/Total number of months	1	Annually	1
2	Regional Pain Management Committee	% Pain Management Committee meeting	No Pain Management Committee meeting/Total number of months	20	Annually	1
3	Hospital Pain Management Committee	% Pain Management Committee meeting	No Pain Management Committee meeting/Total number of months	270	Annually	10
4	Central Pain Management Committee meeting	% Pain Management Committee meeting	No Pain Management Committee meeting/Total number of months	12	Annually	10
5	Regional Pain Management Committee meeting	% Pain Management Committee meeting	No Pain Management Committee meeting/Total number of months	240	Annually	12
6	Hospital Pain Management Committee	% Pain Management Committee meeting	No Pain Management Committee meeting/Total number of months	3240	Annually	120
7	Pain Management Physician order Manual Booklet	% Update of pain management guidelines as physician order sheet for acute and chronic pain printed	No Pain Management Booklet printed/ Total number of hospitals distributed	270	Annually	10
8	Pain Management Manual Electronic	% Update of pain management guidelines as physician order sheet for acute and chronic pain during CPOE	No Pain Management as CPOE /Total number of hospitals had CPOE	50	Annually	NA
Optimal Pain Management Use						
1	Medication reconciliation ER of painkiller medications	% of Medication reconciliation discrepancy at ER	No of patient of painkiller medications discrepancy/ total no medication of reconciliation during ER visit	0	Monthly	NA
2	Medication reconciliation During transferring from unit to unit of painkiller medications	% of Medication reconciliation discrepancy During transferring from unit to unit	No of patient of painkiller medications discrepancyreconciliation during transferring /total no of medicines transferring patients	0	Monthly	NA

3	Medication reconciliation During discharge of painkiller medications	% of Medication discrepancy reconciliation During discharge of painkiller medications	No of patient of painkiller medications discrepancy reconciliation during discharge / total no of drugs discharge patients	0	Monthly	NA
4	Drug-related hospital admission of painkiller medications.	% of drug-related hospital admission	No patient admitted to due hospital to drug related problem / total number of admission	0	Monthly	NA
5	Drug-related hospital ER visit of painkiller medications.	% Drug related hospital ER visit	No patient visited ER hospital due drug related problem / total number of admission	0	Monthly	NA
6	Some unapproved drug indication painkiller medications.	% drug prescribed by physician for unapproved medication	Number of unapproved drug indication per 100 patient receiving pain management services Number of drug unapproved indication/ Total number prescriptions of pain management services	0	Quarterly	NA
7	Automatic Stop Order (ASO) of painkiller medications	% Automatic Stop Order (ASO) painkiller medications through drug distribution system (unit dose system)	No. of Automatic Stop Order (ASO) painkiller medications / total number of patient receiving painkiller medications	100	Monthly	Not reported
8	Pharmacist intervention of painkiller medications	No. of intervention or any suggestions by Pharmacist of painkiller medications	No. of pharmacist intervention per 100 patient receiving painkiller medications	Not specific	Monthly	Not reported
9	Patient Satisfaction Pain management guidelines	% Patient Satisfaction Pain management guidelines	No patient satisfied receiving painkiller medications guidelines / Total number patient receiving painkiller medications	100 %	Monthly	NA
10	Patient Pain Management Patient Quality of Life	% Patient Pain Management Patient Quality of Life	No patient Quality of Life receiving painkiller medications guidelines / Total number patient pain management	100 %	Monthly	NA
11	Patient counseling Pain management guidelines	% Patient counseling Pain management guidelines	No patient counseling receiving painkiller medications guidelines / Total number patient counseling	100 %	Monthly	Not reported
12	Non-available crash cart medication of painkiller medications	% of non-available crash cart medication of painkiller medications	No of crash cart of painkiller medications prescription not dispensed / total crash cart of painkiller medications prescription	0	Monthly	0
13	Antidote gave to patient of painkiller medications	% of Antidote given to patient during poisoning	Number of patients receiving antidote of painkiller medications / total number of patients supposed to receive antidote of painkiller medications	0	Monthly	0
Monitoring Pain Management Medications and Use						
1	Non-available of acute painkiller medications	% of non-available of acute painkiller medications	No of painkiller medications prescription not dispensed / total painkiller medications prescription	0	Monthly	0
2	Non-available medication of chronic pain killer medications.	% of non-available chronic pain killer medications.	No of medication dispensed from medical supply / No of requested medication from medical supply	0	Monthly	0
3	Non-available OPD medication of painkiller medications	% of non-available medication in OPD	No of OPD of painkiller medications prescription dispensed / total OPD of painkiller medications prescription	0	Monthly	0
4	Adherence to Acute Pain management guidelines	% adherence to Pain management guidelines	No acute painkiller medications adhere to guidelines / Total number acute painkiller medications	50%	Monthly	NA

5	Adherence to Chronic Pain Management Guidelines	% adherence to Pain management guidelines	No Chronic painkiller medications adhere to guidelines / Total number Chronic painkiller medications	50%	Monthly	NA
6	% Drug Utilization of painkiller medications	Drug Utilization Evaluation of expensive or high-risk medication	No Selected Drug Utilization adhere to usage criteria / Total Selected Drug Utilization to accede to all usage criteria	50%	Quarterly Bi-annually	NA
7	Medication Error Report painkiller medications.	Rate of Medication Errors	No. of medication error per 100 patient receiving pharmacy services Number of medication errors per 100 days LOS Number of medication errors/ number of prescription	0	Monthly	Not reported
8	Drug Quality Report painkiller medications.	Rate of Drug Quality	No. of Drug Quality discrepancy per 100 patient receiving pharmacy services Number of Drug Quality discrepancy per 100 days LOS Number of Drug Quality discrepancy /number of prescription	0	Monthly	Not reported
9	Adverse Drug Reaction Report painkiller medications.	Rate of Adverse Drug Reaction	No. of adverse drug reaction per 100 patient receiving pharmacy services Number of adverse drug reaction per 100 days LOS Number of Adverse drug reaction/number of prescription	0	Monthly	Not reported
10	Average wait time for a prescription	No of minutes of Patient waiting time for prescription	The time calculated when receiving prescriptions until dispensing the pain management medication to the patients	10-20	Monthly	NA
11	Self Assessment of General of painkiller medications safety	International Safe Medication Practice assessment for all general safety plan	Painkiller medications safety	100	Every six months	NA
12	Pain Management Consumption	% Total budget of painkiller medications	No of painkiller medications budget / No of total pharmacy medications budget	Not specific	Annually	NA
Education						
1	Pain Management Course (Central)	% Pain Management course	No Pain Management course /Total number of courses annually	2	Annually	1
2	Pain Management Course (Region)	% Pain Management course	No Pain Management course /Total number of courses annually	2-4	Annually	NA
3	Pain Management Course (Peripheral)	% Pain Management course	No Pain Management course /Total number of courses annually	270	Annually	NA
Research						
1	Cost avoidance of Pharmacist intervention of pain killer medications	Estimate cost avoidance of Pharmacist Intervention of pain killer medications	Total estimated Cost avoidance of pharmacist intervention per month of pain killer medications	10,000 USD	monthly	NA
2	Cost avoidance of answering drug information question of pain killer medications	No. of DPIC questions asked by healthcare professionals	Total estimated Cost avoidance of answering drug information question per month of painkiller medications	10,000 USD	monthly	NA
3	Incremental cost drug related problem of painkiller medications	Additional charge of drug-related problem of painkiller medications	Total estimated incremental LOS and related issues due to drug related problem, medication errors, adverse drug reaction, untreated indication, non-compliance, drug poisoning, of painkiller medications	Non-specific	Monthly	NA

Conclusion

National pharmacy pain management program is critical system at Ministry of Health institutions in Saudi Arabia. The program is unique national wise and Gulf countries level. The implementation of the program prevents drug misuse, improve medication safety system, prevent medications errors, improve patient outcome and avoid unnecessary economic burden on health care organizations.

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