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INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/17623

DOI URL: <http://dx.doi.org/10.21474/IJAR01/17623>



RESEARCH ARTICLE

ADHERENCE OF PHYSICIANS' PRACTICE TONATIONAL MINISTRY OF HEALTH (MOH) URGENT CARE GUIDELINE IN EASTERN REGION, SAUDI ARABIA

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Manuscript Info

Manuscript History

Received: 28 July 2023

Final Accepted: 31 August 2023

Published: September 2023

Abstract

Introduction: In the new era of the Ministry of health transformation, urgent care units (UCCs) were established in primary care. This research evaluated the current practice at the urgent care unit in comparison to the MOH Guideline of Extended Hour Services.

Materials and Methods: This is an analytical cross-sectional study that included 293 physicians who worked in UCCs at Primary health care (PHC), Saudi Arabia (SA). The data were collected via a validated online questionnaire distributed to the physicians. Furthermore, UCCs were visited to assess the availability of suitable settings. Univariate and multivariate data analyses were done using the SPSS program.

Results: Less than a quarter (23.6%) of UCC physicians were aware of the presence of the National MOH Guideline of extended-hour services. Overall adherence as per physicians' perception of the guideline was 48 (24.7%). Increased adherence to Ministry of Health policy as per guidelines by UCC physicians was associated with attending all training courses (OR = 33.72, 95% CI: 2.116-4.920) and awareness of the MOH manual of extended hours' services (OR = 2.45, 95% CI: 0.345-1.435). Participants agree on the absence of a clear referral policy to an emergency department and outpatient clinics, 32.3% and 52.3% respectively.

Conclusion: UCC physicians' training and practices at PHCs did not adequately adhere to the Ministry of Health guidelines. More effort is needed to achieve better outcomes.

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Introduction:-

The Ministry of Health (MOH) in Saudi Arabia is moving toward enhancements of the primary care model as part of a considerable transformation. The MOH addresses the urgent care center (UCC) with extended working hours at primary health care (PHC) as one of the six systems of care. It provides medical care for illnesses or injuries which require prompt attention but are not that serious to the point that requires referral to the emergency. [1,2,3]

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UCC targets to bridge the gap between PHC and hospital emergency department (ED) physicians. [4] In addition, decrease the number of low acute cases attending ED to avoid the delay in treating true emergencies. [4,6]. Some literature revealed that duplicate duties result in patient confusion in seeking health care services that counteract the target. [7]

There is National Saudi MOH Guideline for extended-hour services. Based on this guideline, urgent care teams need to be trained in dealing with emergency cases. Moreover, the supplies for emergency equipment such as nebulizers, dressings set, and emergency medications need to be in place. Each extended working hours center has a triage system to determine the level of desirable intervention for each patient. Subsequently, the clinical decision was made whether to refer to the emergency department (ED), treat in UCCs, or schedule an appointment in the PHC. In addition, UCCs receive patients who are re-directed from the ED according to their triage system.

Limited studies concerning the UCC were conducted in Saudi Arabia. They revealed that medical care was improved for patients who demand timely intervention. [8] On the other hand, there were some deficiencies in both human and non-human resources. [9] This study aimed to find out the proportion of adherence to national guidelines among physicians working in UCC and associated factors.

Materials and Methods:-

This cross-sectional study was conducted in all UCCs, four centers, in Eastern Province - Saudi Arabia from January 2021 to 2022. All physicians who ever worked in UCC (GP, Family medicine resident, specialist, and consultant) were enrolled. Dentists and other physicians with pure administrative work were non-eligible to participate in this study.

Two data collection tools were created based on the National Saudi MOH Guideline for extended-hour services. The first tool is an observational checklist to assess the availability and adequacy of human and non-human resources. Its components were UCCs' setup namely the manpower, medical tools, equipment, devices, and emergency medication. The second tool was an online questionnaire targeting UCC physicians. It included demographic data, adherence to MOH policies, and obtaining the required training courses. An expert opinion had been used to validate these tools. The pilot study was used to test both tools.

Consent was obtained voluntarily from the participating physicians before data collection. The study proposal was approved by the institutional review board of the King Fahad Specialist Hospital in Dammam and the three involved sectors UCCs.

Data analysis was performed using SPSS program version 20 (IBM Corp in Armonk, NY, USA). Continuous variables were presented as median with interquartile range (IQR) and categorical variables as the frequency with percentage. A multiple ordinal regression model was used to evaluate determinants of physicians' adherence to the Ministry of Health guidelines. Predictors in simple regression with a P-value of less than 0.1 were added to the model. Adjusted odds ratios were calculated with 95% CIs. Statistical significance was defined as a P value < 0.05.

Results:-

A total of 299 physicians were asked to participate in this study with a response rate of 98%. Of them, 195 worked in UCC and were included in the analysis.

Physicians' characteristics are shown in Table 1. The median age of the physicians was 33 (interquartile range (IQR) = 29-36) years. There were 143 (73.3 %), females, and males: females ratio was 1:3. Majority were Saudis 188 (96.4%). Physicians who were certified family medicine board and diploma were 61 (31.3 %) and 10 (5.1%) respectively.

A total of 46 (23.6%) physicians were aware of the MOH manual for extended hours' services in PHC, [Table 2].

Table 3 showed UCC physicians' adherence to the guideline policy. Two-thirds of UCC's physicians (66.1%) were confident in identifying life-threatening, emergency, urgent, and non-urgent cases. More than one-third (36.9%) perceived that their team works effectively in emergencies. More than one-third (36.5%) of the physicians had an available and clear referral policy. More than one-third (37.5%) of the physicians had policies to deal with cases that

need resuscitation. About a quarter (25.7%) of the physicians had a trained resuscitation team. Median overall adherence as per physician's perception of the guideline was 60 (30.8%), Figure 1.

Less than a quarter of the physicians (23.1%) at UCCs did not have an assigned leader for the resuscitation team. More than half (51.3%) of the leaders were family physicians, [Table 4].

Table 5 showed the training requirements for UCC physicians as per the guideline. A valid basic life support certificate was available with 189 (96.9%) physicians. The advanced cardiac life support (ACLS) course was attended by 108 (55.4%) physicians. The Triage skill course was attended by 40 (20.5%) physicians. The common urgent cases management courses of Medical, Obstetrics and Gynecology, Surgical, and Pediatrics specialties were attended by 52 (26.7%) physicians. The pre-hospital trauma life support course was attended by 29 (14.9%) physicians. Physicians who were trained on urgent care cases by senior physicians in their UCC were 49 (25.1%).

Table 6 showed the results of ordinal regression for adherence to the Ministry of Health policy as per guidelines by UCC physicians. Attending all training courses (OR = 33.72, 95% CI: 2.116-4.920) and awareness of the MOH manual of extended hours' services (OR = 2.45, 95% CI: 0.345-1.435) were markedly associated with increased adherence. While Saudi nationality (OR = 0.22, 95% CI: -2.947-0.100) was significantly associated with decreased adherence to the UCC's guidelines.

Table 1:- Participant characteristics (n = 195), IQR: interquartile range; UCC: urgent care unit.

Characteristics	Frequency (%)	Median (IQR)
Age		33 (29-36)
Gender		
Male	52 (26.7%)	
Female	143 (73.3%)	
Nationality		
Saudi	188 (96.4%)	
Non-Saudi	7 (3.6%)	
Years of experience		14 (7-25)
Sector		
Khobar	29 (14.9%)	
Dammam	65 (33.3%)	
Qatif	69 (35.4%)	
Family Medicine Academy resident	32 (16.4%)	
Academic qualification		
MBBS	124 (63.6%)	
Family medicine Board	61 (31.3%)	
Family medicine diploma	10 (5.1)	
Last time work at UCC		
Two years and lower	168 (86.8%)	
More than 2 years	27 (13.8%)	
Days of coverage in UCC last year		7 (3-10)

Table 2:- Urgent care centers' physicians and Ministry of Health manual for extended hours' services in primary healthcare. MOH: Ministry of Health; PHC: primary health care; UCC: urgent care center; CATS: Child and Adolescent Trauma Screen.

Item	Frequency (%)
Aware of the MOH manual for extended hours' services in PHC (n = 195)	
Yes	46 (23.6%)
No	95 (48.7%)
Not sure	54 (27.7%)
Manual of extended-hours services available at PHC' in UCC (n=100)	
Yes	30 (30.0%)
No	19 (19.0%)

Not sure	51 (51.0%)
Aware of the CATS Scale level addressed in the manual (n= 100)	
Yes	0 (0.0%)
No	22 (22.0%)
Not sure	78 (78.0%)
Easy to apply manual of extended hours' services (n=100)	
Yes	35 (35.0%)
No	21 (21.0%)
Not sure	44 (44.0%)

Table 3:- Adherence of urgent care centers' physicians to Ministry of Health policy as per guideline (n= 195).

Items	Disagree	Neutral	Agree
Triage policy			
I am confident in identifying life-threatening, emergency, urgent and non-urgent cases	22 (11.3%)	44 (22.6%)	129 (66.1)
I am confident in prioritizing patients based on the severity	11 (5.6%)	31 (15.9%)	153 (78.4%)
UCC has a complete ACLS team	105 (53.8%)	40 (20.5%)	50 (25.6%)
Teamwork policy			
My team works effectively in emergency situations	52 (26.7%)	71 (36.4%)	72 (36.9%)
at UCC there is a senior physician on my team	98 (45.6%)	31 (15.9%)	100 (51.3%)
The presence of a senior physician is important in my UCC team	4 (2%)	13 (6.7%)	178 (91.3%)
Referral policy			
There is a clear, available policy for referral	75 (38.4%)	49 (25.1%)	71 (36.5%)
Easy access to refer patients to ER	63 (21.5%)	41 (21.0%)	91 (46.7%)
Clear access to refer patients to subspecialty outpatient clinics inside the hospital	102 (52.3%)	45 (23.1%)	48 (24.6%)
A clear accessible call system that enables you to communicate with other health facilities	102 (52.3%)	42 (21.5%)	51 (26.2%)
CPR and resuscitation policy			
Policy to deal with cases that need resuscitation	64 (32.9%)	58 (29.7%)	73 (37.5%)
Trained resuscitation TEAM	97 (49.8%)	48 (24.6%)	50 (25.7%)
I am confident to start and lead the team through resuscitation	83 (42.6%)	54 (27.7%)	58 (29.7%)
I am confident in performing a major trauma assessment on my patient if needed	105 (53.8%)	44 (22.6%)	46 (23.6%)
I am confident that my GCS assessment is appropriate in emergency situations	52 (26.6%)	56 (28.7%)	87 (44.6%)
I am confident in my Burn assessment	46 (23.6%)	64 (32.8%)	85 (43.6%)
I am confident to manage patients in shock status	85 (43.6%)	59 (30.3%)	51 (26.2%)
I am confident to manage patients with acute respiratory distress	50 (25.6%)	69 (35.4%)	76 (39.0%)
I am confident in performing airway management (ex: intubation)	125 (64.1%)	34 (17.4%)	36 (18.5%)
I am confident in my management of unconscious patients	87 (44.6%)	49	59 (75.2%)

		(25.1%)	
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Figure 1:- Median overall adherence of urgent care centers' physicians to Ministry of Health policy as per guideline (n= 195).

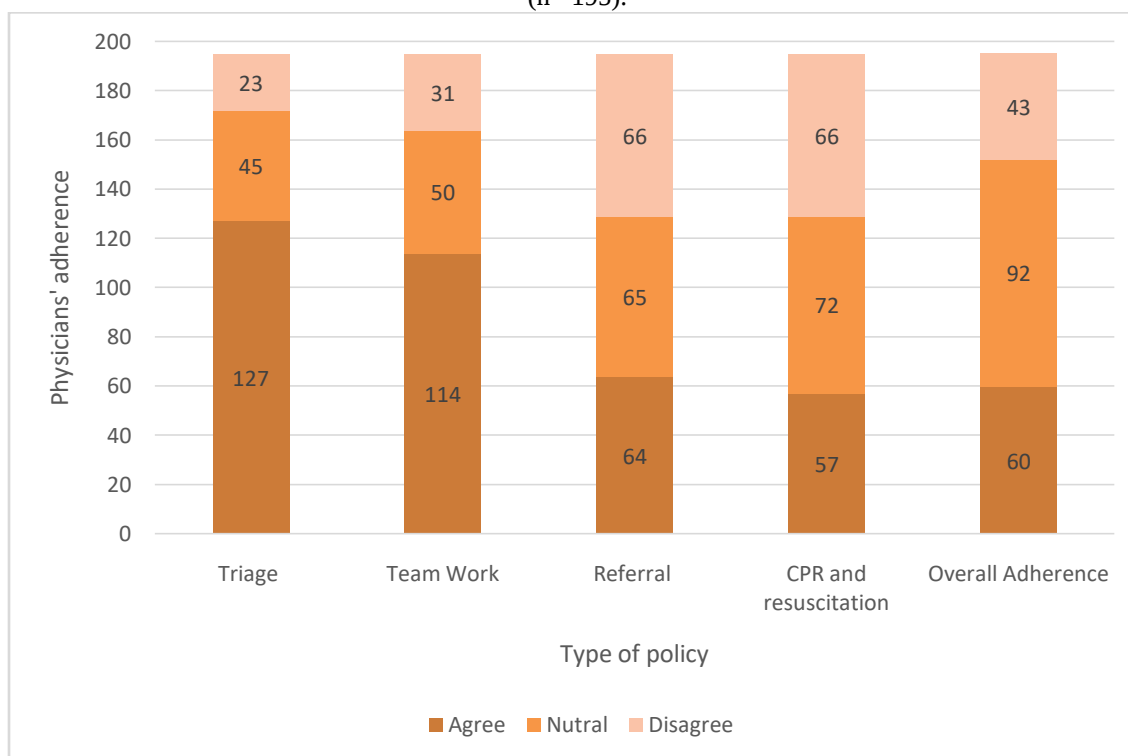


Table 4:- Resuscitation team leader in urgent care center (n=195).

Resuscitation team leader at UCC	Frequency (%)
No assigned team leader	
Yes	45 (23.1%)
No	150 (76.9%)
Family physician	
Yes	101 (51.8%)
No	94 (48.2%)
General practitioner	
Yes	22 (11.3%)
No	173 (88.7%)
Internist/cardiologist	
Yes	8 (4.1%)
No	187 (95.9%)
Emergency physician	
Yes	39 (20.0%)
No	156 (80.0%)

Table 5:- Fulfillment of physicians' training requirements according to Ministry of Health guidelines for those who were working at urgent care centers. BLS: basic life support; UCC: urgent care center, ACLS: advanced cardiac life support.

Training requirements	Frequency (%)
BLS Certificate Valid (n=195)	
Yes	189 (96.9%)
No	6 (3.1%)

Attend ACLS course (n=195)	
Yes	108 (55.4%)
No	87 (44.6%)
If yes, ACLS certificate valid	
Yes	66 (61.1%)
No	42 (38.9%)
If yes, are you ready to practice ACLS	
Yes	41 (38.0%)
No	9 (8.3%)
Not sure	58 (53.7%)
Attend any triage skill course (n=195)	
Yes	40 (20.5%)
No	155 (79.5%)
If yes, ready to practice the triage skill course	
Yes	27 (67.5%)
No	4 (10.0%)
Not sure	9 (22.5%)
Attend the common urgent cases management courses of these specialties (Medical, Obstetrics and gynecology, Surgical, Pediatrics) (n=195)	
Yes	52 (26.7%)
No	143 (73.3%)
If yes, are you ready to practice common urgent cases management	
Yes	35 (67.3%)
No	4 (7.7%)
Not sure	13 (25.0%)
Attend a pre-hospital trauma life support (n=195)	
Yes	29 (14.9%)
No	166 (85.1%)
If yes, is your pre-hospital trauma life support certificate valid	
Yes	17 (58.6%)
No	12 (41.4%)
If yes, are you ready to practice trauma life support	
Yes	18 (62.1%)
No	3 (10.3%)
Not sure	8 (27.6%)
Trained on urgent care cases by a senior physician in your UCC (n=195)	
Yes	49 (25.1%)
No	146 (74.9%)
If you had any training from the above, are you satisfied with it	
Yes	26 (54.2%)
No	7 (14.6%)
Not sure	16 (32.6%)
A clear policy for phone consultation between the UCC team and emergency physician on call(n=195)	
Yes	58 (29.7%)
No	80 (41.0%)
Not sure	57 (29.2%)
If yes, are you satisfied with a phone consultation	
Yes	30 (51.7%)
No	91 (32.8%)
Not sure	9 (15.5%)
Is there any electronic healthcare system that facilitates services in UCC(n=195)	
Yes	65 (33.3%)
No	79 (40.5%)
Not sure	51 (26.2%)

Table 6:- Ordinal regression for adherence to Ministry of Health policy as per guidelines by UCC physicians. OR: odds ratio; PHC: primary health care; MOH: ministry of health; UCC: urgent care center.

Item	Simple regression				Multiple regression			
	OR	P- value	95% Confidence Interval		OR	P- value	95% Confidence Interval	
Age	0.97	0.181	-0.081	-0.015				
Gender (male)	0.75	0.335	-0.867	0.295				
Number of Working Days in UCC in last year	1.00	0.873	-0.006	0.005				
Nationality (Saudi)	0.25	0.051	-2.756	0.011	0.22	0.036	-2.947	0.100
Qualification (Family medicine)	0.89	0.668	-0.649	0.416				
Get all Training courses	36.31	<0.001	2.206	4.977	33.72	<0.001	2.116	4.920
Aware of the MOH manual for extended hours' services in PHC	3.04	<0.001	0.576	1.650	2.45	0.001	0.354	1.435

Discussion:-

This study assessed the adherence of the UCCs' physicians' practices and training to the MOH National manual for extended hours services in PHC. This study found a minority of physicians who worked at UCCs were aware of the presence of the guideline. This may affect the physicians' practices and the patient's pathway in addition to the UCCs' setting. [10]

The physicians' perception of their adherence to the triage policy was the best compared to other policies. However, one in five physicians attended triage skill courses as this is one of the basic skills for PHCs workers. [11]

About two third of the physicians perceived that their team performed ineffectively in an emergency. This may be related to that about half of the teams did not have a senior physician despite physicians' emphasis on its necessity. Additionally, absence of a clear referral policy for most of the physicians.[12] This might lead to misunderstandings and delays in the delivery of care without accomplishing the objectives of creating UCC. [7]

Compared to other policies, the physicians' perception of their adherence to the resuscitation policy was the worst. Around one-third of UCCs' physicians agreed on the presence of a clear policy to deal with resuscitation cases. Trained resuscitation team formed one-quarter of UCCs teams. Only 30% of physicians were confident to start resuscitation and lead the team.

The majority of UCC physicians were non-confident in managing airways, trauma, and dealing with shock and unconscious patients though they were able to assess patients' glass coma scale (GCS). However, the literature showed that the majority of cases visiting extended services and PHC centers were mainly respiratory and skin cases, and physician confidence in dealing with resuscitation cases is required. [13]

Fortunately, the majority of the resuscitation team leaders were senior family physicians, which is encouraging because the team leader that is appointed was qualified.

Valid basic life support (BLS) certificate is vital for any medical care provider especially those who are working in UCCs. [14] However, there is a reasonable percentage of UCC physicians who did not have it.

Although an ACLS certificate is an essential requirement for practicing at UCCs according to the MOH guideline, it had been obtained by half of UCCs' physicians. In addition to considerable number didn't renew ACLS and were not confident to practice it.

The majority of UCC physicians did not attend other basic courses based on the MOH guideline such as triage courses, prehospital trauma life support, and common urgent care management courses. Empowering the UCCs' physicians with training courses drives high-standard patient care. [15]

Furthermore, a low percentage of UCC physicians were trained by senior emergency physicians which is a mandatory requirement to ensure patient safety and good practice.

Unfortunately, none of the participants were aware of the CATS system which had been used in the UCCs worldwide. [16] It is a crucial system as it provides the right tract according to the case severity, which subsequently ensured the patient's safety without delaying critical cases management. [11]

This study was conducted in Saudi Arabia's big cities in the Eastern region, therefore, caution in result generalization should be considered.

Enhancement of UCCs' physicians' awareness of the National MOH Manual of extended hours services in UCCs and providing the required training courses can improve adherence to the guideline. It is important to clarify a Policy and call system pathway between UCCs and emergency departments to achieve better care.

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