

# **Impact of Second Time Accreditation on Enhancing the Compliance with Infection Prevention and Control Standards in Primary Healthcare Centers in Jordan**

Samah Sameeh Alamri  
Prof. Mohammad Shehada  
Dr. Ma'an Al Sager

---

## **Abstract:**

*This research aims to investigate “The Impact of Second Time Accreditation on Enhancing the Compliance with Infection Prevention and Control (IPC) Standards in Primary Healthcare Centers in Jordan”. The data was collected from the primary healthcare (PHC) center’s accreditation reports, utilizing a data collection form in addition to interviewing ten PHC centers directors using a semi-structured technique. A representative random sample of first and second accreditation reports for 79 PHC centers were selected and reviewed covering the public, private and educational health sectors from all governorates of Jordan. A Statistical Package for Social Sciences (SPSS) showed significant impact for the second time accreditation on enhancing the compliance with IPC standards. Results showed that re-accreditation had a positive impact on staff and visitors’ satisfaction, and the main challenges included the absence of a dedicated employee for infection control and lack of sterilization tools. Facilitating factors included the introduction of sterilization devices and training a specialized employee as a sterilization technician. All centers expressed interest in continuing with accreditation programs, and the main recommendation for improvement was to increase coordination between centers and the Health Care Accreditation Council. These findings provide insights for healthcare centers in Jordan and other countries facing similar challenges in infection control and prevention measures.*

**Keywords:** Accreditation, Reaccreditation, Compliance with Standards, Infection Prevention and Control Standards, Primary Healthcare Center.

---

Date of Submission: 28-05-2023

Date of Acceptance: 09-06-2023

---

## **I. Introduction:**

Primary healthcare (PHC) focuses on people and their needs, and supporting and enhancing their ability to maintain their health. Parental care, immunization, treatment for chronic and infectious diseases, and basic medical care are among the services provided by PHC.

PHC is an important component of health systems that offers families close-to-home and cost-effective treatments. National and international agencies have emphasized the need of establishing a robust, comprehensive PHC in any health system in recent years (**Tumusiime et al., 2020**)

Accreditation is considered as a reputable method for quality improvement in healthcare organizations (**Hussein et al., 2021**). It has been used worldwide to enhance the work in hospitals, while only the high-income countries used it in PHC settings (**Melo, 2016**). The recent shift toward PHC accreditation came from the need to focus more on the role of PHC in healthcare systems in disease prevention and health promotion and to afford trustable primary healthcare delivery services that ensure quality control and improvement (**Tabrizi, 2019**).

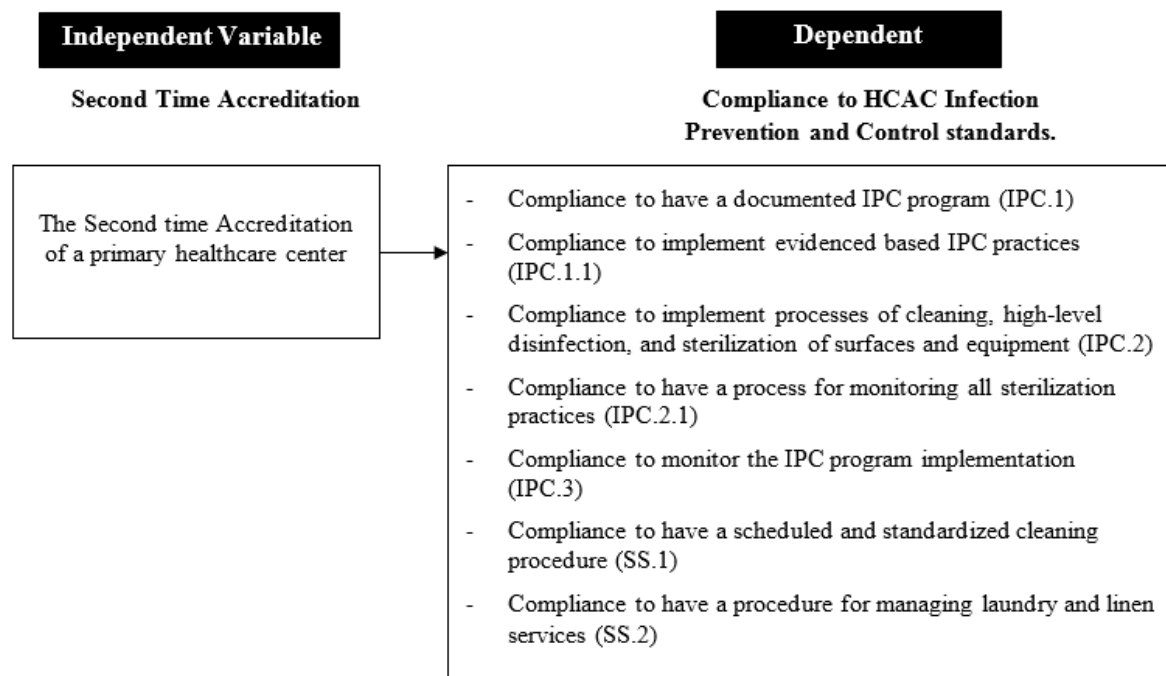
Although obtaining and maintaining accreditation is crucial for delivering high-quality healthcare services and improving commitment to quality improvement, patient safety, and accountability in healthcare institutions (**Algunmeeyn et al., 2020**), little research has examined the effects of repeated accreditations on primary healthcare centers' quality-of-care dimensions. Given the importance of continuous reaccreditations to sustain accreditation benefits for institutions and patients, this study aims to investigate the impact of a second round of accreditation on compliance with infection prevention and control (IPC) standards at primary healthcare centers in Jordan. This research will contribute to decision-makers' understanding of the significance of repeated accreditation in improving compliance with accreditation standards and encouraging healthcare providers to support reaccreditation.

**Objectives of Research:**

Based on the above, the following objectives have been identified:

1. To investigate the PHC centers' compliance with accreditation standards related to IPC during the first-time accreditation in HCAC accredited PHC centers in Jordan.
2. To check out the PHC centers' compliance with accreditation standards related to IPC during the second time accreditation in HCAC accredited PHC centers in Jordan.
3. To explore the factors influencing compliance with IPC standards and stakeholders' experiences with the HCAC accreditation process in PHC centers in Jordan.
4. To evaluate the overall impact of second-time accreditation on enhancing the compliance of IPC standards of HCAC accredited PHC centers in Jordan.

**Research Model**



**Research Hypothesis:**

- Ho: The second time accreditation has no significant impact on enhancing compliance with HCAC Infection Prevention and Control standards in primary healthcare centers at ( $\alpha=0.05$ ).
- Ho1: The second time accreditation has no significant impact on enhancing the compliance to have a documented IPC program in primary healthcare centers at ( $\alpha=0.05$ ).
- Ho2: The second time accreditation has no significant impact on enhancing the compliance to implement evidenced-based IPC practices in primary healthcare centers at ( $\alpha=0.05$ ).
- Ho3: The second time accreditation has no significant impact on enhancing the compliance to have processes for cleaning, high-level disinfection, and sterilization of surfaces and equipment in primary healthcare centers at ( $\alpha=0.05$ ).
- Ho4: The second time accreditation has no significant impact on enhancing the compliance to have a process for monitoring all sterilization practices in primary healthcare centers at ( $\alpha=0.05$ ).
- Ho5: The second time accreditation has no significant impact on enhancing the compliance to monitor the IPC program in primary healthcare centers at ( $\alpha=0.05$ ).
- Ho6: The second time accreditation has no significant impact on enhancing the compliance to have a scheduled and standardized cleaning procedure in primary healthcare centers at ( $\alpha=0.05$ ).
- Ho7: The second time accreditation has no significant impact on enhancing the compliance to have a procedure for managing laundry and linen services in primary healthcare centers at ( $\alpha=0.05$ ).

## II. Literature Review:

### Accreditation and Reaccreditation:

A systematic process in which the performance of the healthcare organizations is evaluated against a predefined set of rules and standards by some independent professional body is related to accreditation. This process includes onsite surveys, subsequent fellowship, and self-evaluation (Accreditation Commission for Health Care (ACHC)).

Accreditation began as a response to variations in educational quality between institutions, then expanded to include healthcare (Tomasich et al., 2020). The idea was to provide self-direction to firms by articulating high-quality standards and principles that would consistently yield better results than if they weren't implemented. Rules and regulations, subject matter expert input, experience, research, and evidence-based practice were used to develop certification standards. The method was based on the representation of management units vertically (Tomasich et al., 2020). Accreditation now focuses on making systematic changes to standardize and systemize procedures, which can entail significant organizational changes at all levels.

Accreditation has been shown to offer numerous advantages around the world. Furthermore, patients benefit the most from high-quality care and patient safety. It increases community trust in the healthcare organization's services and allows the healthcare unit to compare itself to the best. Accreditation also gives access to trustworthy and verified information about the facilities, infrastructure, and level of care (Asiri et al., 2022). Accreditation also provides a framework to assist in the creation and implementation of systems and processes that improve operational effectiveness. It not only promotes good health outcomes but also enhances internal and external stakeholder communication and collaboration, improving interdisciplinary team effectiveness and exhibiting credibility and a commitment to quality and responsibility (Babakkora & Kattan, 2023). It also assists in lowering liability costs, finding areas for increased funding for healthcare institutions, and providing a platform for negotiating these funds. Furthermore, accreditation improves an organization's understanding of the continuum of care, improves its reputation among end-users and increases their awareness and perception of quality care, as well as their overall satisfaction level, and finally promotes capacity-building, professional development, and organizational learning.

Devkaran, et. al. (2019) concluded that accreditation and repeated accreditation has the capacity to sustain improvements over quality measures (Devkaran et al., 2019). Another study conducted in Swiss acute care hospital in 2016 to analyze the costs and benefits of reaccreditation found that, in spite of the reported cost of reaccreditations for health care institutions, the quality and safety culture was significantly promoted and developed (Thurneysen et al., 2016). The finding reported by Thurneysen, et. al (2016) is supported by another study conducted in Saudi Arabia, where the authors concluded that the repeated accreditation had a positive impact on the process and implementation of change in the hospital that resulted in improvement in the delivery of patient care and other health services (Algahtani et al., 2017).

### Compliance to accreditation standards

Accreditation is widely recognized as a quality-improvement instrument that spurs activities at the process, structure, and outcome levels (Asiri et al., 2022). Accreditation results in changes to an organization's operations and practices. Because of adherence to accreditation criteria, this practice of data collection on quality concerns and metrics, which is aided by accreditation, takes on a more organized and systematic aspect (Mosadeghrad et al., 2021). According to a study conducted by Devkaran et al. (2015), the inclusion of indicators in accrediting standards shifted organizational leaders' attention to measuring and collecting data linked to quality indicators, resulting in a culture of performance monitoring and measurement (Devkaran et al., 2015).

According to HCAC accreditation manual (2016), reducing health care-associated infections through good practices is critical to keeping clients safe and controlling costs. Infection prevention and control measures maximize client outcomes and provide effective, efficient and quality health services. Health care facilities must execute infection prevention and control policies supported by institutional management (HCAC, 2016).

### Accreditation for Primary Health Care (PHC) Centers:

The term primary health care (PHC) was defined in 1978 and revised many times after this. A clear and concise definition to aid in the coordination of future Primary Health Care activities in the whole world, national levels, and at local levels is developed by the World Health Organization (WHO) along with a guide for implementation. Primary health care is a whole-of-society approach to health that prioritizes people's needs as early as possible in the continuum, from health promotion and disease prevention to treatment, rehabilitation, and palliative care, and as close as possible to their daily lives (WHO & UNICEF, 2018).

There is evidence that some nations with a strong primary health care system have more equitable health outcomes than those with more specialized treatment. This is because PHC is "considered to be less expensive to people and more cost-efficient to society, therefore freeing up resources to address the health needs of the most disadvantaged" (Galanakos et al., 2023). Furthermore, research has shown that a strong PHC system can enhance patient health outcomes while retaining quality and lowering healthcare expenditures (Galanakos et al., 2023).

Accreditation programs were created to establish standards and improve care quality in acute care settings. Accreditation organizations are focusing more on quality and strategies to improve primary care services as primary care expands and the healthcare industry places a greater emphasis on this sector. In fact, in Canada, efforts have been made to define primary care-specific accreditation standards that address elements that are solely primary care and do not apply in a hospital setting (Denis et al., 2023).

Primary health care was defined by the WHO in 1992 as encompassing the four core components of health promotion, illness prevention, curative medicine, and rehabilitation; however, these characteristics are interpreted differently in different healthcare systems (WHO & UNICEF, 2018).

Accreditation of PHC practices is said to raise awareness of PHC center's role in the healthcare system and promote quality control and development. Al-Asiri et al. (2022) investigated the advantages of PHC accreditation and found accredited centers had more employees committed to risk management, environmental safety, and quality improvement. Accredited centers also reported more quality assurance initiatives, audited their clinical records more regularly, used credentialing techniques, reviewed providers, and trained staff than non-accredited clinics (Asiri et al., 2022).

### **Health Care Accreditation Council and the Primary healthcare centers in Jordan**

Recently, the Inter-Ministerial Committee for Health Sector Reform declared PHC as the top priority for health sector reform. Jordan's Health Sector Reform Action Plan 2018-2022 emphasizes the best utilization of PHC services. Planners foresee the need to improve the quality and safety of health care services and ensure their sustainability; to improve monitoring and controlling communicable diseases; to reduce the prevalence of non-communicable diseases; to enhance reproductive health and child services; to enhance the health of school students and the school environment; and to strengthen environmental and vocational sanitation. All these objectives are strongly enabled by cost effective primary care (Health Finance and Governance Activity, 2018).

PHC centers in Jordan operates in both urban and rural areas and range in size from small to comprehensive centers. According to Jordanian Ministry of health (MOH), PHC centers are classified in to comprehensive PHC, PHC and branch health center, while the comprehensive PHC provides the widest variety of services in comparison to other center's types (Al-Hadeethi et al., 2020).

Jordanian health care systems are governed by the private sectors, universities, royal medical services (RMS), and the Ministry of Health (MOH) while the latest provides the widest range of preventive and curative care to the population in Jordan through a huge network of health centers that are distributed all over the kingdom; 109 comprehensive health centers, 374 primary health centers, and 1861 branch health centers (Jordanian Ministry of Health, 2023).

Health Care Accreditation Council (HCAC) is an internationally renowned institution: it is the first and only institution in the Arab region that has achieved the three ISQua accreditations; for its standards, for the surveyors' certification course and for the organization. The International Society for Quality in Health Care (ISQua) is an international organization that accredits healthcare standards, surveyor training courses, and accreditation agencies, working to improve the quality and safety of health care worldwide for over 30 years, its network of health care professionals' spans over 70 countries and 6 continents (ISQua, 2022).

The HCAC is a non-profit organization that aims to promote excellence and foster continuous quality improvement in health care services in Jordan through accreditations. They perform various tasks such as initiating accreditation for all levels of health care, including primary health care, monitoring health organizations to ensure appropriate treatment procedures are being followed, and providing training to employees in the field of accreditation.

One of HCAC's primary goals is to establish, revise, classify, and disseminate national health care standards for health care facilities and programs that meet the requirements of the international society for quality in health care (ISQua). These standards define the characteristics of a program's structure and operation that HCAC considers crucial to the program's quality and attainment of its objectives.

The HCAC primary health care accreditation standards are specifically designed to provide high-quality services in the areas of health promotion and disease prevention, patient care and results, patient satisfaction, patient safety, and infection prevention and control. To achieve these standards, programs must meet optimal requirements that are clearly defined by HCAC (HCAC, 2021) .

## **III. Research Methodology:**

### **Nature of Research**

This research follows a mixed-methods approach where both descriptive and analytical data methods are utilized to investigate and explain "The Impact of Second Time Accreditation on Enhancing the Compliance with Infection Prevention and Control (IPC) Standards in Primary Healthcare Centers in Jordan". A thorough literature review was conducted to address the variables related to PHC centers accreditation and reaccreditation along with compliance to IPC standards. After obtaining ethical approval from the HCAC, MOH, Institute for Family Health/

Noor Al Hussein Foundation, Jordan University of Science and Technology Health Center, the accreditation reports of 79 PHC centers were accessed and reviewed for IPC standards utilizing a data collection form (**Appendix A**). IPC standards scored as (met, partially met, not met) based on the degree of PHC center’s compliance to the standard requirements, then the standard’s evaluation scores were transformed to numerical form by dividing the number of “met” requirements on the total number of requirements for each standard. The data collection tool considered valid and reliable as it is adapted from the HCAC validated standard manual which is approved by the ISQua (**HCAC, 2016**). The dependent variable (compliance to IPC standards) was identified by calculating the mean of IPC standards score for all PHC centers, and the same was applied for identified independent variable (second time accreditation score). The variables were tested for correlation and regression with appropriate statistical analysis test using Statistical Package for Social Science (SPSS version 21).

**Population and Sampling**

All PHC centers which are accredited for more than one time by HCAC in Jordan during 2011 till 2021 were considered as the population of this study and they were 104 PHC centers.

After adopting Dixon and Pearce (2011) sampling formula for clinical audit (**Nancy Dixon & Pearce, 2011**), a random sample of 79 PHC centers were included in this study out of the total population of (104 PHC centers). The center’s reports were selected from all Jordanian governorates in equal proportions, in order to ensure a representative sample.

Sampling formula for 95% confidence level and ±5% accuracy:

$$\text{Sample size} = \frac{1.96^2 * N * p(1-p)}{(0.05^2 * N) + (1.96^2 * p(1-p))}$$

Qualitative data were collected through semi-structured interviews with ten PHC directors to evaluate their perceptions of the second time accreditation in regard to IPC standards. The interview questions developed based on the literature review and the research objectives. The interviews were recorded and transcribed verbatim for analysis. The qualitative data was analyzed using thematic analysis to identify recurring themes and patterns related to the impact of second-time accreditation on enhancing compliance with IPC standards. The ten health centers were selected through a random sampling method, the selected health centers also represent a diverse geographical area, ensuring that a range of perspectives are captured, each interview lasted approximately 20-30 minutes, allowing for in-depth discussion of the topic.

**Limitations:**

We would not be able to generalize the findings of this study to other PHC center’s sectors (educational and private) as the vast majority of the studied population was PHC centers from the public sector (77 centers) and only one center was from the educational sector and another one was from private sector; this imbalance is due to the nature of original population itself and not because of a bias in selection.

**Statistical Analysis:**

**Quantitative data analysis and findings**

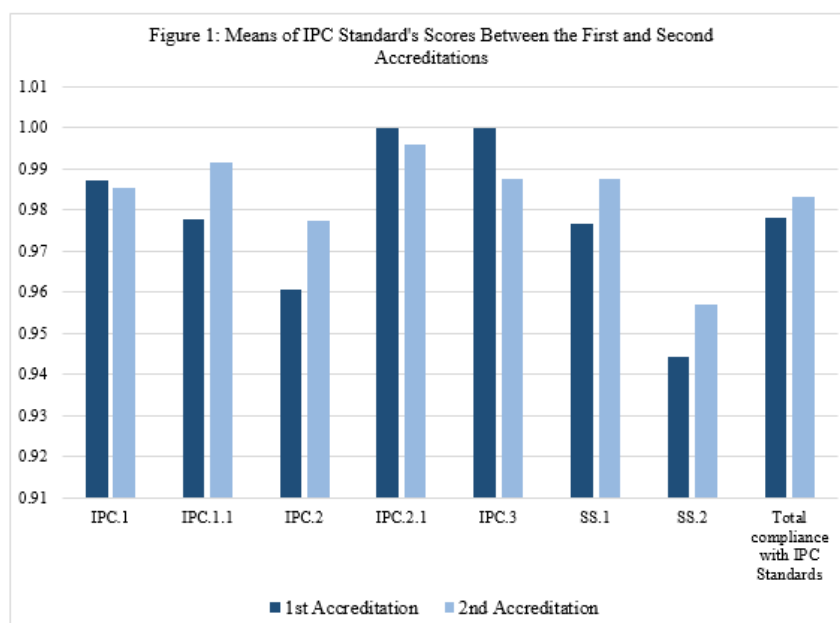
Seventy-nine accreditation reports were included in the study and have been analyzed to address the main research question in this paper “*Dose second accreditation for PHC centers affect the compliance with infection control standards?*”. **Table 1** shows the summary of demographic data analysis. The “patients flow per day” for the range (1 to 200) was the highest frequency 35 (44.3%), and the “full time staff number” was 47 (59.5%) for PHC centers that have a less than 50 full time employed staff, the majority of PHC was a non-comprehensive PHC (center type= PHC) which was equal to 48 (60.8%). The 79 PHC centers found to be from 12 Jordanian governorates, the governorates were grouped into three regions: north Jordan (Irbid, Ajloun, Jarash, Almafraaq) 29 (36.7%), central Jordan (Amman, Albalqa, Madaba, Zarqa) 39 (49.4%) and south Jordan (Alkarak, Aqba, Tafaileh, Maan) 11 (13.9%).

**Table 1:** Demographics data descriptive analysis summary

	Frequency	%
Patients flow per day		
1 to 200	35	44.3%
201 to 400	18	22.8%
>= 401	26	32.9%
Full time Staff No.		
< 50	47	59.5%
>=51	32	40.5%

Center type		
Comprehensive PHC	31	39.2%
PHC	48	60.8%
Region		
North Jordan	29	36.7%
<i>Irbid</i>	9	11.4%
<i>Ajloun</i>	8	10.1%
<i>Jarash</i>	9	11.4%
<i>Almafraq</i>	3	3.8%
Central Jordan	39	49.4%
<i>Amman</i>	14	17.7%
<i>Albalqa</i>	10	12.7%
<i>Madaba</i>	7	8.9%
<i>Zarqa</i>	8	10.1%
South Jordan	11	13.9%
<i>Alkarak</i>	5	6.3%
<i>Aqaba</i>	3	3.8%
<i>Tafileh</i>	2	2.5%
<i>Maan</i>	1	1.3%

The mean of the IPC standards scores for the 1<sup>st</sup> and 2<sup>nd</sup> time accreditation was calculated and depicted in **Figure 1**, in the 1<sup>st</sup> accreditation, the IPC.2.1 and IPC.3 reported the highest score (1.00) among the other seven standards, and the lowest score was for SS.2 (0.944), while in the 2<sup>nd</sup> accreditation, the IPC.2.1 was the highest score (0.996) and the lowest score was for SS.2 (0.957). in **Table 2**, IPC.2 Standard mean increased from (0.961) in 1<sup>st</sup> accreditation to (0.977) in 2<sup>nd</sup> accreditation, reporting the highest difference in means (0.016), while in IPC.3 the mean score in 1<sup>st</sup> accreditation (1.00) was decreased to (0.987) in 2<sup>nd</sup> accreditation, reporting the highest negative difference in means (-0.013). All IPC standards scores showed differences in mean values between the 1<sup>st</sup> and 2<sup>nd</sup> accreditation.



**Table 2:** Means of IPC Standard's Scores in the First and Second Accreditations

	1st Accreditation				2nd Accreditation			
	Mean	Std. Deviation	Min.	Max.	Mean	Std. Deviation	Min.	Max.
Compliance to have a documented IPC program (IPC.1)	0.99	0.06	0.50	1.00	0.99	0.08	0.50	1.00
Compliance to implement evidenced based IPC practices (IPC.1.1)	0.98	0.08	0.50	1.00	0.99	0.05	0.67	1.00
Compliance to implement processes of cleaning, high-level disinfection, and sterilization of surfaces and equipment (IPC.2)	0.96	0.12	0.40	1.00	0.98	0.08	0.60	1.00
Compliance to have a process for monitoring all sterilization practices (IPC.2.1)	1.00	0.00	1.00	1.00	1.00	0.04	0.67	1.00
Compliance to monitor the IPC program implementation (IPC.3)	1.00	0.00	1.00	1.00	0.99	0.11	0.00	1.00
Compliance to have a scheduled and standardized cleaning procedure (SS.1)	0.98	0.09	0.50	1.00	0.99	0.07	0.43	1.00
Compliance to have a procedure for managing laundry and linen services (SS.2)	0.94	0.16	0.00	1.00	0.96	0.16	0.00	1.00
Total compliance with IPC Standards	0.98	0.04	0.73	1.00	0.98	0.04	0.80	1.00

An independent sample t-test was performed to compare the “compliance of IPC standards” in “Comprehensive PHC” centers and “PHC” centers. As in **Table 3 a**, there were no significant differences in the (total compliance of IPC standards, IPC.1, IPC.1.1, IPC.2, IPC.2.1, IPC.3) between “Comprehensive PHC” centers and “PHC” centers. These results suggest that the “center type” has no significant impact on the (total compliance of IPC standards, IPC.1, IPC.1.1, IPC.2, IPC.2.1, IPC.3).

While there were significant differences in the (SS.1) between “comprehensive PHC” centers (Mean = 0.971, SD = 0.070), and “PHC” centers (Mean = 0.989, SD = 0.043);  $t(df) = -1.243, p = 0.007$ . Also, there were significant differences in the (SS.2) between “comprehensive PHC” centers (Mean = 0.968, SD = 0.075), and “PHC” centers (Mean = 0.940, SD = 0.130);  $t(df) = 1.220, p = 0.031$ . These results suggest that the “center type” has significant impact on the compliance with SS.1 and SS.2 standards.

**Table 3 a:** Independent sample t test (center type)

Dependent Variables	Center type	n	Mean	Std. Deviation	t	p value
Total compliance with IPC Standards	Comprehensive PHC	31	0.982	0.023	0.341	0.345
	PHC	48	0.980	0.033		
Compliance to have a documented IPC program (IPC.1)	Comprehensive PHC	31	0.986	0.049	0.035	0.913
	PHC	48	0.986	0.053		
Compliance to implement evidenced based IPC practices (IPC.1.1)	Comprehensive PHC	31	0.985	0.043	0.095	0.773
	PHC	48	0.984	0.051		
Compliance to implement processes of cleaning, high-level disinfection, and sterilization of surfaces and equipment (IPC.2)	Comprehensive PHC	31	0.963	0.080	-0.599	0.210
	PHC	48	0.973	0.068		
Compliance to have a process for monitoring all sterilization practices (IPC.2.1)	Comprehensive PHC	31	1.000	0.000	0.802	0.105
	PHC	48	0.997	0.024		
Compliance to monitor the IPC program implementation (IPC.3)	Comprehensive PHC	31	1.000	0.000	0.802	0.105
	PHC	48	0.990	0.072		
Compliance to have a scheduled and standardized cleaning procedure (SS.1)	Comprehensive PHC	31	0.971	0.070	-1.243	0.007
	PHC	48	0.989	0.043		
Compliance to have a procedure for managing laundry and linen services (SS.2)	Comprehensive PHC	31	0.968	0.075	1.220	0.031
	PHC	48	0.940	0.130		

Another independent sample t-test was performed to compare the “compliance with IPC standards” in the two groups of “full time staff number”. As in **Table 3 b**, there were no significant differences in the (total compliance of IPC standards, IPC.1, IPC.1.1, IPC.2, IPC.2.1, IPC.3, SS.1, SS.2) between first group with staff number less than 50 and the second group with staff number more than equal 50. These results suggest that the “full time staff number” has no significant impact on the (total compliance with IPC standards, IPC.1, IPC.1.1, IPC.2, IPC.2.1, IPC.3, SS.1, SS.2).

**Table 3 b:** Independent sample t test (Full time staff No.)

Dependent Variables	Full time staff No.	n	Mean	Std. Deviation	t	p value
Total compliance with IPC Standards	1 <sup>st</sup> group: < 50	4 7	0.98 0	0.034	- 0.402	0.134
	2 <sup>nd</sup> group: >=51	3 2	0.98 2	0.021		
Compliance to have a documented IPC program (IPC.1)	1 <sup>st</sup> group: < 50	4 7	0.98 4	0.054	- 0.478	0.372
	2 <sup>nd</sup> group: >=51	3 2	0.99 0	0.046		
Compliance to implement evidenced based IPC practices (IPC.1.1)	1 <sup>st</sup> group: < 50	4 7	0.98 2	0.052	- 0.577	0.253
	2 <sup>nd</sup> group: >=51	3 2	0.98 8	0.040		
Compliance to implement processes of cleaning, high-level disinfection, and sterilization of surfaces and equipment (IPC.2)	1 <sup>st</sup> group: < 50	4 7	0.97 3	0.064	0.657	0.148
	2 <sup>nd</sup> group: >=51	3 2	0.96 3	0.083		
Compliance to have a process for monitoring all sterilization practices (IPC.2.1)	1 <sup>st</sup> group: < 50	4 7	0.99 6	0.024	- 0.823	0.096
	2 <sup>nd</sup> group: >=51	3 2	1.00 0	0.000		
Compliance to monitor the IPC program implementation (IPC.3)	1 <sup>st</sup> group: < 50	4 7	0.98 9	0.073	- 0.823	0.096
	2 <sup>nd</sup> group: >=51	3 2	1.00 0	0.000		
Compliance to have a scheduled and standardized cleaning procedure (SS.1)	1 <sup>st</sup> group: < 50	4 7	0.98 9	0.044	1.185	0.011
	2 <sup>nd</sup> group: >=51	3 2	0.97 2	0.069		
Compliance to have a procedure for managing laundry and linen services (SS.2)	1 <sup>st</sup> group: < 50	4 7	0.94 3	0.130	- 0.775	0.102
	2 <sup>nd</sup> group: >=51	3 2	0.96 3	0.079		

A one-way ANOVA was performed to compare the effect of “patients flow per day” on “compliance with IPC standards”. The test revealed that there were no statistically significant differences in the (total compliance with IPC standards, IPC.1, IPC.1.1, IPC.2, IPC.2.1, IPC.3, SS.1, SS.2) and the patients flow three groups (1 to 200, 2001 to 400, >= 401). According to **Table 3 c**, (p > .05) in all dependent variables.

**Table 3 c:** One way ANOVA test (Patients flow per day)

Dependent Variable	Patient's flow	n	Mean	Std. Deviation	F	p value
Total compliance with IPC Standards	1 to 200	35	0.979	0.035	0.110	0.896
	201 to 400	18	0.983	0.022		
	>= 401	26	0.981	0.024		
	Total	79	0.981	0.029		
Compliance to have a documented IPC Program (IPC.1)	1 to 200	35	0.983	0.060	0.367	0.694
	201 to 400	18	0.995	0.020		
	>= 401	26	0.984	0.053		
	Total	79	0.986	0.051		
Compliance to implement evidenced based IPC practices (IPC.1.1)	1 to 200	35	0.976	0.059	1.145	0.324
	201 to 400	18	0.995	0.020		
	>= 401	26	0.989	0.042		
	Total	79	0.985	0.048		
Compliance to implement processes of cleaning, high-level disinfection, and sterilization of surfaces and equipment (IPC.2)	1 to 200	35	0.986	0.049	2.115	0.128
	201 to 400	18	0.944	0.092		
	>= 401	26	0.963	0.079		
	Total	79	0.969	0.072		



*Impact of Second Time Accreditation on Enhancing the Compliance with Infection Prevention ..*

Compliance to have a process for monitoring all sterilization practices (IPC.2.1)	1 to 200	35	0.995	0.028	0.622	0.539
	201 to 400	18	1.000	0.000		
	>= 401	26	1.000	0.000		
	Total	79	0.998	0.019		
Compliance to monitor the IPC program Implementation (IPC.3)	1 to 200	35	0.986	0.085	0.622	0.539
	201 to 400	18	1.000	0.000		
	>= 401	26	1.000	0.000		
	Total	79	0.994	0.056		
Compliance to have a scheduled and standardized cleaning procedure (SS.1)	1 to 200	35	0.972	0.070	1.493	0.231
	201 to 400	18	1.000	0.000		
	>= 401	26	0.983	0.050		
	Total	79	0.982	0.055		
Compliance to have a procedure for managing laundry and linen services (SS.2)	1 to 200	35	0.954	0.124	0.045	0.956
	201 to 400	18	0.944	0.115		
	>= 401	26	0.950	0.095		
	Total	79	0.951	0.112		

Another one-way ANOVA test was performed to compare the effect of “regions” on “compliance with IPC standards”, **Table 3 d**. A one-way ANOVA revealed that there were no statistically significant differences in the (total compliance with IPC standards, IPC.1, IPC.1.1, IPC.2, IPC.3, SS.1, SS.2) and the three identified regions (north Jordan, central Jordan, south Jordan). According to **Table 3 d**, ( $p > .05$ ) in all dependent variables excluding IPC.2.1 where there was a statistically significant difference among the “regions” ( $F(2,76) = 3.271, p = 0.043$ ) **Table 3 e**. According to **Table 3 f**, Tukey’s HSD test for multiple comparisons found that the mean value of “IPC.2.1” was significantly different between “central Jordan” and “south Jordan” categories ( $p = .045, 95\% \text{ C.I.} = 0.00027, 0.02973$ ).

**Table 3 d:** One way ANOVA test (region)

Dependent Variable	Regions	N	Mean	Std. Deviation	F	p value
Total compliance with IPC Standards	North Jordan	29	0.979	0.031	0.201	0.818
	Central Jordan	39	0.983	0.027		
	South Jordan	11	0.978	0.034		
	Total	79	0.981	0.029		
Compliance to have a documented IPC Program (IPC.1)	North Jordan	29	0.994	0.022	0.604	0.549
	Central Jordan	39	0.983	0.058		
	South Jordan	11	0.977	0.075		
	Total	79	0.986	0.051		
Compliance to implement evidenced based IPC practices (IPC.1.1)	North Jordan	29	0.994	0.022	0.922	0.402
	Central Jordan	39	0.980	0.058		
	South Jordan	11	0.977	0.055		
	Total	79	0.985	0.048		
Compliance to implement processes of cleaning, high-level disinfection, and sterilization of surfaces and equipment (IPC.2)	North Jordan	29	0.950	0.087	1.781	0.175
	Central Jordan	39	0.977	0.067		
	South Jordan	11	0.991	0.030		
	Total	79	0.969	0.072		
Compliance to have a process for monitoring all sterilization practices (IPC.2.1)	North Jordan	29	1.000	0.000	3.271	0.043
	Central Jordan	39	1.000	0.000		
	South Jordan	11	0.985	0.050		
	Total	79	0.998	0.019		

*Impact of Second Time Accreditation on Enhancing the Compliance with Infection Prevention ..*

Compliance to monitor the IPC program Implementation (IPC.3)	North Jordan	29	0.983	0.093	0.859	0.428
	Central Jordan	39	1.000	0.000		
	South Jordan	11	1.000	0.000		
	Total	79	0.994	0.056		
Compliance to have a scheduled and standardized cleaning procedure (SS.1)	North Jordan	29	0.988	0.054	1.298	0.279
	Central Jordan	39	0.973	0.063		
	South Jordan	11	1.000	0.000		
	Total	79	0.982	0.055		
Compliance to have a procedure for managing laundry and linen services (SS.2)	North Jordan	29	0.941	0.138	0.960	0.387
	Central Jordan	39	0.967	0.081		
	South Jordan	11	0.918	0.133		
	Total	79	0.951	0.112		

**Table 3 e:** ANOVA test

Compliance to have a process for monitoring all sterilization practices (IPC.2.1)					
	Sum of Squares	df	Mean Square	F	p value
Between Groups	0.002	2	0.001	3.271	0.043
Within Groups	0.025	76	0.000		
Total	0.027	78			

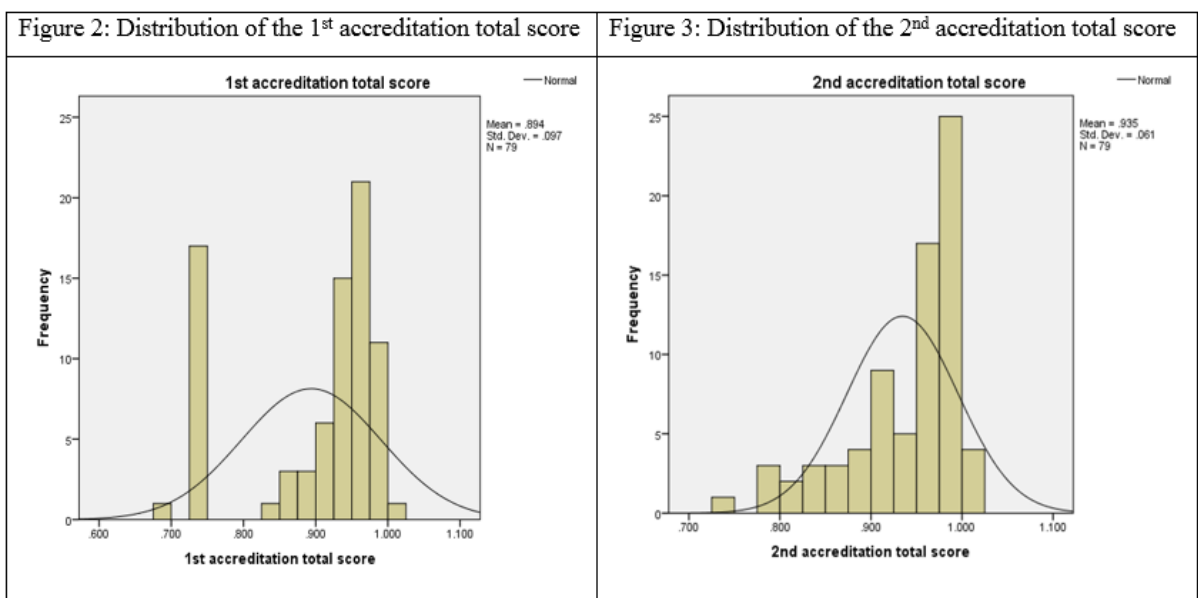
**Table 3 f:** Tukey post-hoc multiple comparisons

Dependent Variable:		Compliance to have a process for monitoring all sterilization practices (IPC.2.1)					
		Tukey HSD					
(I) Region		Mean Difference (I-J)	Std. Error	p value	95% Confidence Interval		
					Lower Bound	Upper Bound	
North Jordan	Central Jordan	0.00	0.004	1.000	-0.01058	0.01058	
	South Jordan	0.01	0.006	0.055	-0.00028	0.03028	
Central Jordan	North Jordan	0.00	0.004	1.000	-0.01058	0.01058	
	South Jordan	0.02	0.006	0.045	0.00027	0.02973	
South Jordan	North Jordan	-0.01	0.006	0.055	-0.03028	0.00028	
	Central Jordan	-0.02	0.006	0.045	-0.02973	-0.00027	

A descriptive analysis test was performed for the 1<sup>st</sup> and 2<sup>nd</sup> accreditation total scores as shown in **Table 4**, the data for both two variables could be statistically considered normally distributed (skewness, kurtosis between -2 and 2) (**George & Mallery, 2003**) (**Cutting, 2020**). The mean of 1<sup>st</sup> accreditation total score was (0.894) and the SD was (0.097), while for the 2<sup>nd</sup> accreditation total score, mean was (0.935) and the SD was (0.061).

**Table 4:** 1st and 2nd accreditation score descriptive analysis summary

	n	Mean	Std. Error of Mean	Median	Mode	Std. Deviation	Variance	Skewness	Kurtosis	Min.	Max.
1st accreditation total score	79	0.894	0.011	0.942	0.727	0.097	0.009	-1.033	-0.606	0.694	1.000
2nd accreditation total score	79	0.935	0.007	0.959	0.975	0.061	0.004	-1.374	1.336	0.733	1.000



A Pearson correlation coefficient was computed to assess the linear relationship between 2<sup>nd</sup> accreditation total score and the total compliance with IPC standards. There was a significant correlation between the two variables,  $r(77) = 0.282$ ,  $p = .013$  (Table 5 a). And in studying the correlation between 2<sup>nd</sup> accreditation total score with the scores of (IPC.1, IPC.1.1, IPC.2, IPC.2.1, IPC.3, SS.1, SS.2), Table 5 b, there was a significant correlation between the 2<sup>nd</sup> accreditation total score and the scores of IPC.1 ( $r(77) = 0.256$ ,  $p = .026$ ) and IPC.2.1 ( $r(77) = 0.300$ ,  $p = .008$ ) and IPC.3 ( $r(77) = 0.384$ ,  $p = .001$ ).

**Table 5 a:** Pearson Correlation test (r) for 1st and 2nd accreditation with the total compliance with IPC standards

	Total compliance with IPC Standards	
	r	p value
1st accreditation total score	.421	0.000
2nd accreditation total score	.282	0.013

**Table 5 b:** Pearson Correlation test (r) for 2nd accreditation with the compliance with IPC standards

	2nd accreditation total score	
	r	p value
Compliance to have a documented IPC program (IPC.1)	.256	0.026
Compliance to implement evidenced based IPC practices (IPC.1.1)	0.000	0.999
Compliance to implement processes of cleaning, high-level disinfection, and sterilization of surfaces and equipment (IPC.2)	0.131	0.259
Compliance to have a process for monitoring all sterilization practices (IPC.2.1)	.300	0.008
Compliance to monitor the IPC program implementation (IPC.3)	.384	0.001
Compliance to have a scheduled and standardized cleaning procedure (SS.1)	-0.013	0.914
Compliance to have a procedure for managing laundry and linen services (SS.2)	0.071	0.540

Simple linear regression was used to test if 2<sup>nd</sup> accreditation total score significantly predicted the total compliance with IPC standards. The fitted regression model was: total compliance with IPC standards = .854 + .136 (score). The overall regression was statistically significant (R<sup>2</sup> = 0.080, F(1,74) = 6.410, p = .013). It was found that the total compliance score of IPC standards increased 0.136 scores with second time accreditation.

**Table 6 a:** Regression test for the 2nd time accreditation and the compliance with IPC standards (model summary)

Model Summary			
R	R Square	Adjusted R Square	Std. Error of the Estimate
.282 <sup>a</sup>	.080	.067	.02835

a. Predictors: (Constant), 2nd accreditation total score

**Table 6 b:** Regression test for the 2nd time accreditation and the compliance with IPC standards (ANOVA)

ANOVA <sup>a</sup>					
	Sum of Squares	Df	Mean Square	F	p value
Regression	.005	1	.005	6.410	.013 <sup>b</sup>
Residual	.059	74	.001		
Total	.065	75			

a. Dependent Variable: Total Compliance with IPC Standards

b. Predictors: (Constant), 2nd accreditation total score

**Table 6 c:** Regression test for the 2nd time accreditation and the compliance with IPC standards (coefficients)

Coefficients <sup>a</sup>					
	Unstandardized Coefficients		Standardized Coefficients	t	p value
	B	Std. Error	Beta		
(Constant)	.854	.050		17.004	.000
2nd accreditation total score	.136	.054	.282	2.532	.013

a. Dependent Variable: Total Compliance with IPC Standards

### Qualitative data analysis and findings

Thematic analysis was used to analyze the data collected from the semi-structured interviews. The analysis aimed to identify common themes and patterns that emerged from the data. The following themes were identified:

1. Impact of re-accreditation on staff satisfaction: All of the healthcare center directors reported that the staff satisfaction with infection control and prevention practices improved after re-accreditation. They mentioned that the service performance became faster and of higher quality, which positively affected the staff's job satisfaction.
2. Impact of re-accreditation on patient satisfaction: The majority of the healthcare center directors reported that patient satisfaction with infection control and prevention practices improved after re-accreditation. They mentioned that patients perceived the healthcare centers as cleaner and more trustable, and they were satisfied with the faster and higher quality service provided.
3. Challenges and obstacles to implementing infection control programs: The absence of dedicated employees to follow up on infection control matters and the lack of tools to ensure the quality of sterilization, such as devices or indicators, were reported as the main challenges and obstacles that affected the implementation of infection control programs.
4. Facilitating factors and potentials that helped in the implementation of infection control programs: The introduction of autoclave sterilization devices into service, providing chemical and biological indicators to measure the effectiveness of sterilization, training a specialized employee as a sterilization technician, and support from the directorates for all infection control standards requirements were reported as facilitating factors that helped in the implementation of infection control programs.

5. Interest in continuing to progress towards accreditation programs: All healthcare center directors expressed their interest in continuing to progress towards accreditation programs. They reported that accreditation has created a system that manages and connects all elements and people of the center together for unified goals.

6. Feedback on the accreditation program: Some healthcare center directors reported that the coordination between the center and the Health Care Accreditation Council (HCAC) should be increased, and coordination should not be limited between the Council and the directorates. They were also surprised by some evaluation criteria that they had not heard of before.

The findings of the qualitative analysis suggest that re-accreditation has a positive impact on both staff and patient satisfaction with infection control and prevention practices in healthcare centers. The improved satisfaction was attributed to the faster and higher quality service provided as a result of the accreditation process. However, the absence of dedicated employees to follow up on infection control matters and the lack of tools to ensure the quality of sterilization were identified as the main challenges and obstacles that affected the implementation of infection control programs.

The introduction of autoclave sterilization devices into service, providing chemical and biological indicators to measure the effectiveness of sterilization, training a specialized employee as a sterilization technician, and support from the directorates for all infection control standards requirements were reported as facilitating factors that helped in the implementation of infection control programs.

All healthcare center directors expressed their interest in continuing to progress towards accreditation programs, as they have created a system that manages and connects all elements and people of the center together for unified goals. Some healthcare center directors reported that the coordination between the center and the Health Care Accreditation Council (HCAC) should be increased, and coordination should not be limited between the Council and the directorates. They were also surprised by some evaluation criteria that they had not heard of before.

*"Accreditation has created a system that manages and connects all elements and people of the center together for unified goals." –Director of a PHC center from Irbid city*

*"At first, accreditation was seen as an additional effort on the staff, especially due to the lack of written policies and procedures regarding infection control and prevention measures. However, in the second round of accreditation and since the major effort was already accomplished, with procedures being integrated into the daily work routine, employee satisfaction with accreditation was better." - Director of a PHC center from Amman city*

*"Coordination between the center and the Health Care Accreditation Council (HCAC) should be increased, and coordination should not be limited between the Council and the directorates." - Multiple respondents.*

#### **IV. Discussion**

Our findings noted that the mean of total compliance with IPC standards improved in the second accreditation by (0.005) which represent a slight improvement in the total compliance mean in contrast to the first accreditation. This finding supported by the significant correlation results between the second time accreditation and the total compliance with IPC standards ( $r = 0.282$ ,  $p = 0.013$ ). However, the correlation between the second time accreditation and the total compliance with IPC standards is not applied for all of the individual IPC standards, for example, the IPC.1, IPC.2.1 and IPC.3 have the same significant correlation with second time accreditation, while it's the opposite for IPC.1.1, IPC.2, SS.1 and SS.2 where the results showed no significant correlation between these standards and the second time accreditation.

The above findings are aligned with the Devkaran (2019), Thurneysen (2016), Algahtani, A (2017) and others, who claimed that reaccreditation has a positive impact on different aspects of quality of service (**Devkaran et al., 2019**) (**Thurneysen et al., 2016**) (**Algahtani et al., 2017**), however, none of them have specifically addressed the impact of the reaccreditation on the IPC standards, despite they agreed on the overall positive impact.

Although the analysis exhibits the significant correlation ( $r = 0.282$ ) for our variables, but it is considered as a weak correlation score, which should be considered for future studies.

The qualitative data obtained from the interviews conducted with healthcare center directors was aligned with the finding of the quantitative analysis carried out in this research and it provided valuable insights into the PHC centers directors experiences with the accreditation process and its impact on infection control and prevention practices in their centers.

One of the recurring themes in the interviews was the importance of having dedicated staff responsible for infection control and prevention measures. Several directors mentioned the absence of such staff as a major obstacle to effective implementation of the infection control program. However, some centers were able to overcome this challenge by providing training to existing staff members or hiring specialized personnel. This

highlights the need for healthcare centers to prioritize the establishment of dedicated infection control teams to ensure the safety of patients and staff.

Another key finding was the impact of accreditation on staff satisfaction with infection control practices. Initially, some staff members considered accreditation as an additional burden due to the lack of established policies and procedures. However, after the initial accreditation process, staff members reported greater satisfaction with infection control measures, as they recognized the benefits of having standardized procedures and clear roles and responsibilities. This suggests that the initial challenges of accreditation may be outweighed by the long-term benefits of improved infection control practices and staff satisfaction.

Patient satisfaction with infection control measures also emerged as an important factor. Several directors reported increased patient satisfaction with cleanliness and infection control practices after the centers were re-accredited. This highlights the importance of infection control measures in maintaining patient confidence and trust in healthcare providers.

The presence of sterilization devices and indicators was also cited as a facilitating factor in implementing infection control measures. Several centers reported the introduction of sterilization devices, which helped to ensure the effectiveness of sterilization procedures. Providing indicators to measure the effectiveness of sterilization was also found to be important in ensuring compliance with infection control measures.

One common challenge mentioned by many directors was the lack of coordination between the center and the Health Care Accreditation Council (HCAC). Directors reported being surprised by evaluation criteria they had not heard of before and suggested that better communication between the center and the HCAC would be beneficial. This highlights the importance of ongoing communication and collaboration between healthcare centers and accreditation bodies to ensure a smooth and effective accreditation process.

Based on the discussed results and findings:

- The hypothesis “second time accreditation has no significant impact on enhancing compliance with IPC standards in PHC centers” is tested and the results showed that the model is significant ( $r = 0.282$ ,  $p = .013 < .05$ ), therefore this hypothesis is rejected.

- The hypothesis “second time accreditation has no significant impact on enhancing the compliance to have a documented IPC program (IPC.1)” is tested and the results showed that the model is significant ( $r = 0.256$ ,  $p = .026 < .05$ ), therefore this hypothesis is rejected.

- The hypothesis “second time accreditation has no significant impact on enhancing the compliance to implement evidenced-based IPC practices (IPC.1.1)” is tested and the results showed that the model is not significant ( $r = 0.000$ ,  $p = .999 > .05$ ), therefore this hypothesis is retained.

- The hypothesis “second time accreditation has no significant impact on enhancing the compliance to have processes for cleaning, high-level disinfection, and sterilization of surfaces and equipment (IPC.2)” is tested and the results showed that the model is not significant ( $r = 0.131$ ,  $p = .259 > .05$ ), therefore this hypothesis is retained.

- The hypothesis “second time accreditation has no significant impact on enhancing the compliance to have a process for monitoring all sterilization practices (IPC.2.1)” is tested and the results showed that the model is significant ( $r = 0.300$ ,  $p = .008 < .05$ ), therefore this hypothesis is rejected.

- The hypothesis “second time accreditation has no significant impact on enhancing the compliance to monitor the IPC program (IPC.3)” is tested and the results showed that the model is significant ( $r = 0.384$ ,  $p = .001 < .05$ ), therefore this hypothesis is rejected.

- The hypothesis “second time accreditation has no significant impact on enhancing the compliance to have a scheduled and standardized cleaning procedure (SS.1)” is tested and the results showed that the model is not significant ( $r = -0.013$ ,  $p = .914 > .05$ ), therefore this hypothesis is retained.

- The hypothesis “second time accreditation has no significant impact on enhancing the compliance to have a procedure for managing laundry and linen services (SS.2)” is tested and the results showed that the model is not significant ( $r = 0.071$ ,  $p = .540 > .05$ ), therefore this hypothesis is retained.

## **V. Conclusion:**

This study revealed the importance of reaccreditation in PHC centers and its positive impact on the total compliance with infection prevention and control standards (IPC). Generally, reaccreditation for PHC centers is advised to increase the compliance with IPC standards, consequently maintaining a safe practice for patients visiting PHC centers and also will help in controlling the costs associated with acquired infections due to the unsafe practices and ineffective compliance with the IPC standards. However, not all IPC standards were affected by the second time accreditation.

### **Recommendations:**

Based on the findings of this study, it is recommended for PHC centers to apply for second time accreditation and maintain repeated accreditations over time, in order to cultivate the culture of safety and infection prevention, and to attain the associated benefits such as cost reduction, patients satisfaction and community health.

### **Future research:**

Further studies are indicated to validate the result of this research by considering the compliance with IPC standards over time, not only with the first time and second time accreditations.

It's advised to repeat this study for hospitals rather than the PHC centers only, and it is also recommended to consider the other accrediting bodies in addition to the HCAC.

In this study, we dealt only with one quality aspect (compliance with IPC standards), but there is a room for studying other aspects such as human resource, governance and leadership, client care and information management.

### **References**

- [1]. Al-Hadeethi, O., Al Nsour, M., Khader, Y., Alkhalifat, O. K., Al Jawaldeh, H., & Hayajneh, A. (2020). The capacity of primary health care centers in Jordan to manage hypertension: areas for improvement. *Journal of Human Hypertension*. <https://doi.org/10.1038/s41371-020-00433-z>
- [2]. Algahtani, H., Aldarmahi, A., Manlangit, J., & Shirah, B. (2017). Perception of hospital accreditation among health professionals in Saudi Arabia. *Annals of Saudi Medicine*, 37(4), 326–332. <https://doi.org/10.5144/0256-4947.2017.326>
- [3]. Alunmeeyn, A., Alrawashdeh, M., & Alhabashneh, H. (2020). Benefits of applying for hospital accreditation: The perspective of staff. *Journal of Nursing Management*, 28(6), 1233–1240. <https://doi.org/10.1111/jonm.13066>
- [4]. Asiri, A. M. A., Almutairi, A. H. D., Khaluf, N., Alanazi, A. M. S., Alshuwaier, I. A. I., Albishri, M. A., ... & Alyousef, S. M. A. (2022). The Advantages of Accreditation for Healthcare Services. *International Journal of Medical Science and Dental Research*, 5(6), 176-189.
- [5]. Babakkora, M. A., & Kattan, W. M. (2023). Accreditation impact on quality of healthcare organization services and culture in a tertiary hospital in Saudi Arabia. *Saudi Journal of Health Systems Research*. <https://doi.org/10.1159/000529643>
- [6]. Bentley, T. G. K., Effros, R. M., Palar, K., Keeler, E. B., Quarterly, M., & Keeler, B. (2013). Waste in the U . S . Health Care System : A Conceptual Framework Published by : Wiley on behalf of Milbank Memorial Fund content in a trusted digital archive . We use information technology and tools to increase productivity and facilitate new forms Milba. 86(4), 629–659.
- [7]. Braithwaite, J., Vining, R. F., & Lazarus, L. (1994). The boundaryless hospital. *Australian and New Zealand Journal of Medicine*, 24(5), 565–571. <https://doi.org/10.1111/j.1445-5994.1994.tb01759.x>
- [8]. Cutting, J. C. (2020). SPSS: Descriptive Statistics by Illinois State University. <https://psychology.illinoisstate.edu/jccutti/138web/spss/spss3.html>
- [9]. Denis, J. L., Usher, S., & Préval, J. (2023). Health reforms and policy capacity: The Canadian experience. *Policy and Society*, 42(1), 64-89.
- [10]. Devkaran, S., & O'Farrell, P. N. (2015). The impact of hospital accreditation on quality measures: an interrupted time series analysis. *BMC health services research*, 15(1), 1-14.
- [11]. Devkaran, S., O'Farrell, P. N., Ellahham, S., & Arcangel, R. (2019). Impact of repeated hospital accreditation surveys on quality and reliability, an 8-year interrupted time series analysis. *BMJ Open*, 9(2), 1V. <https://doi.org/10.1136/bmjopen-2018-024514>
- [12]. Fortune, T., O'Connor, E., & Donaldson, B. (2015). Guidance on designing healthcare external evaluation programmes including accreditation. *International Society for Quality in Health Care*, 1–84.
- [13]. Galanakos, S. P., Bablekos, G. D., Tzavara, C., Karakousis, N. D., Sigalos, E., & Bablekos, G. (2023). Primary Health Care: Our Experience From an Urban Primary Health Care Center in Greece. *Cureus*, 15(2).
- [14]. George, D., & Mallery, P. (2003). SPSS for Windows step by step: A simple guide and reference. 11.0 update.
- [15]. Greenfield, D., & Braithwaite, J. (2008). Health sector accreditation research: A systematic review. *International Journal for Quality in Health Care*, 20(3), 172–183. <https://doi.org/10.1093/intqhc/mzn005>
- [16]. HCAC. (2016). Primary Health Care and Family Planning Accreditation Standards (3rd ed.). Health Care Accreditation Council.
- [17]. HCAC. (2021). Health Care Accreditation Council Company Profile. December.
- [18]. Health Finance and Governance Activity. (2018). Primary Healthcare Report: Assessment of Supply and Demand Drivers. November, 1–18.
- [19]. Hussein, M. ( 1,2 ), Pavlova, M. ( 1 ), Groot, W. ( 1,3 ), & Ghalwash, M. ( 2 ). (2021). The impact of hospital accreditation on the quality of healthcare: a systematic literature review. *BMC Health Services Research*, 21(1). <https://doi.org/10.1186/s12913-021-07097-6>
- [20]. ISQua. (2022). ISQua. <https://isqua.org/>
- [21]. Jordanian Ministry of Health. (2023). Hospitals. Retrieved April 6, 2023, from <https://www.moh.gov.jo/EN/List/Hospitals>
- [22]. Lewis, S. (2007). Accreditation in health care and education: The promise, the performance, and lessons learned. ... the Bar on Performance and Sector Revitalization, December. [http://www.hscorp.ca/wp-content/uploads/2011/12/Accreditation\\_in\\_Health\\_Care\\_and\\_Education1.pdf](http://www.hscorp.ca/wp-content/uploads/2011/12/Accreditation_in_Health_Care_and_Education1.pdf)
- [23]. Lozeau, D., Langley, A., & Denis, J. L. (2002). The corruption of managerial techniques by organizations. *Human Relations*, 55(5), 537–564. <https://doi.org/10.1177/0018726702055005427>
- [24]. Macinko, J., Starfield, B., & Shi, L. (2003). The contribution of primary care systems to health outcomes within Organization for Economic Cooperation and Development (OECD) countries, 1970-1998. *Health Services Research*, 38(3), 831–865. <https://doi.org/10.1111/1475-6773.00149>
- [25]. Melo, S. (2016). The impact of accreditation on healthcare quality improvement: a qualitative case study. *Journal of health organization and management*.
- [26]. Mosadeghrad, A. M. (2021). Hospital accreditation: The good, the bad, and the ugly. *International Journal of Healthcare Management*, 14(4), 1597-1601.
- [27]. Nancy Dixon, & Pearce, M. (2011). Guide to Ensuring Data Quality in Clinical Audits. *Healthcare Quality Quest*, November, 1–50. <https://www.hqip.org.uk/wp-content/uploads/2018/02/hqip-guide-to-ensuring-data-quality-in-clinical-audits.pdf>

[28]. O’Beirne, M., Zwicker, K., Sterling, P. D., Lait, J., Lee Robertson, H., & Oelke, N. D. (2013). The status of accreditation in primary care. *Quality in Primary Care*, 21(1), 23–31. <http://europepmc.org/abstract/MED/23735631>

[29]. Pomey, M. P., Lemieux-Charles, L., Champagne, F., Angus, D., Shabah, A., & Contandriopoulos, A. P. (2010). Does accreditation stimulate change? A study of the impact of the accreditation process on Canadian healthcare organizations. *Implementation Science*, 5(1). <https://doi.org/10.1186/1748-5908-5-31>

[30]. Rooney, A. L., & van Ostenberg, P. R. (1999). *Licensure, Accreditation and Certification: Approaches to Health Services Quality*. 4.

[31]. Saleh, S. S., Alameddine, M. S., & Natafji, N. M. (2014). Beyond accreditation: A multi-track quality-enhancing strategy for primary health care in low- and middle-income countries. *International Journal of Health Services*, 44(2), 355–372. <https://doi.org/10.2190/HS.44.2.k>

[32]. Shaw, C. D. (2000). External quality mechanisms for health care: Summary of the ExPeRT project on visitatie, accreditation, EFQM and ISO assessment in European Union countries. *International Journal for Quality in Health Care*, 12(3), 169–175. <https://doi.org/10.1093/intqhc/12.3.169>

[33]. Tabrizi, J. S., & Gharibi, F. (2019). Primary healthcare accreditation standards: a systematic review. *International journal of health care quality assurance*, 32(2), 310-320.

[34]. Tamimi, A. (2016). *Jordan / General Data Health Care system in Jordan Prof . Ahmad Tamimi , M . D ., Ph . D Professor of Neurosurgery General Director of JUH. February.*

[35]. Thurneysen, N., Plank, T., & Boes, S. (2016). Analysis of costs and benefits of a re-accreditation of a Swiss acute care hospital. *Safety in Health*, 2(1), 1–8. <https://doi.org/10.1186/s40886-016-0013-x>

[36]. Tomasich, F., Oliveira, A. V. D., Oliveira, A. D. J., & Correia, M. I. T. D. (2020). The history of quality and safety of the surgical patient: from the initial standards to the present day. *Revista do Colégio Brasileiro de Cirurgiões*, 47.

[37]. Tumusiime, P. ( 1 ), Karamagi, H. ( 1 ), Titi-Ofei, R. ( 1 ), Amri, M. ( 1,2,3 ), Seydi, A. B. W. ( 1 ), Kipruto, H. ( 1 ), Droti, B. ( 1 ), Zombre, S. ( 1 ), Yoti, Z. ( 1 ), Zawaira, F. ( 1 ), & Cabore, J. ( 1 ). (2020). Building health system resilience in the context of primary health care revitalization for attainment of UHC: proceedings from the Fifth Health Sector Directors’ Policy and Planning Meeting for the WHO African Region. *BMC Proceedings*, 14. <https://doi.org/10.1186/s12919-020-00203-2>

[38]. WHO, & UNICEF. (2018). A vision for primary health care in the 21st century: towards universal health coverage and the Sustainable Development Goals. 46(4), 2. <https://doi.org/10.1046/j.1466-7657.46.no4issue346.4.x>

**Appendices:**

**Appendix A: Documents Review Tool**

Center no.: Sector Type: Governorate:		Center type: Client flow: Staff no.:	First accreditation date: Total Score of 1 <sup>st</sup> accreditation:			Second accreditation date Total Score of 2 <sup>nd</sup> accreditation:		
Standard	Requirements	Met	Partially met	Unmet	Met	Partially met	Unmet	
IPC.1 A documented infection prevention and control program is in place.	1. The center has a documented infection prevention and control program to reduce the risk of infection transmission, the program is: <ul style="list-style-type: none"> <li>a. Approved by the director of the center.</li> <li>b. An integral part of the center's quality improvement program.</li> <li>c. Under the direction of a designated and qualified health care professional who has training and current competence in infection control.</li> <li>d. Responsible for providing a plan of action for preventing, identifying, and managing infections, communicable diseases, occupational injuries and illnesses among staff members and clients.</li> <li>e. Responsible for implementing corrective and preventive measures for improvement.</li> <li>f. Appropriate to the center's size, geographic location, services and clients.</li> </ul> 2. Relevant staff members are oriented regarding the program 3. The program is implemented.							
IPC.1.1 Evidence based infection prevention and control practices are implemented in the center.	1. There are documented policies and procedures for the infection prevention and control practices related but not limited to each: <ul style="list-style-type: none"> <li>▪ Hand Hygiene</li> <li>▪ Correct use of protective barriers and equipment (e.g. gloves, protective clothing)</li> <li>▪ Correct processing of contaminated instruments</li> <li>▪ Prevention of blood-borne infections</li> <li>▪ Safe injection practices</li> <li>▪ Environmental infection control (clinical surface, housekeeping cleaning)</li> <li>▪ Reproductive health and family planning</li> <li>▪ Dental and oral health services</li> </ul> 2. Relevant staff members are oriented. 3. There is evidence of implementing these practices							



	4. The practices are monitored and improved.						
IPC.2 A process for cleaning, high-level disinfection, and sterilization of surfaces and equipment is in place.	<ol style="list-style-type: none"> <li>1. There are documented policies and procedures based on evidence-based practices that include, but are not limited to: <ol style="list-style-type: none"> <li>a. Receipt, decontamination, cleaning,</li> <li>b. Preparation and packaging</li> <li>c. Cleaning, high level disinfection, or sterilization</li> <li>d. Storage and distribution of clean supplies</li> </ol> </li> <li>2. The relevant staff members are trained.</li> <li>3. The policies and procedures are implemented and documentation is kept</li> <li>4. The policies and procedures are monitored and improved.</li> <li>5. If these processes are contracted, or not performed inside the center, procedures are in place to assure that the evidence-based practices are followed.</li> </ol>						
IPC.2.1 There is a process for monitoring all sterilization practices.	<ol style="list-style-type: none"> <li>1. There are documented policies and procedures are in place for each type of monitoring technique, that include at least: <ol style="list-style-type: none"> <li>a. How to perform the testing</li> <li>b. How often testing should be done</li> <li>c. How the results are documented</li> <li>d. Timeframe for maintain sterilization records</li> </ol> </li> <li>2. The monitoring is done with mechanical (e.g., time, temperature, pressure) and chemical (internal and external) indicators (If the internal chemical indicator is visible, an external indicator is not needed).</li> <li>3. Biologic indicators are used to monitor the effectiveness of sterilizers.</li> <li>4. Corrective actions are taken and documented.</li> <li>5. The relevant staff members are trained.</li> <li>6. The policies and procedures are implemented.</li> </ol>						
IPC.3 The infection prevention and control program is monitored /evaluated	<ol style="list-style-type: none"> <li>1. There is continuous monitoring/evaluation of the infection prevention and control program to ensure its effectiveness.</li> <li>2. Monitoring/evaluation include but not limited to: <ol style="list-style-type: none"> <li>a. Periodic observational assessments</li> <li>b. Checklists to document procedures</li> <li>c. Routine review of occupational exposures to blood borne pathogens</li> <li>d. Evaluation of performance indicators through; collecting, aggregating and analyzing of surveillance data.</li> </ol> </li> <li>3. The results are disseminated to the relevant leaders and staff members. Action is taken when needed.</li> <li>4. Links with the quality improvement plan, risk management program are established.</li> </ol>						
SS.01 There is a scheduled and standardized cleaning procedure in place.	<ol style="list-style-type: none"> <li>1. Standardized housekeeping procedures have been approved as part of the infection prevention and control program.</li> <li>2. There is a schedule for cleaning.</li> <li>3. There are specific procedures for high-risk areas such as the procedure rooms, contaminated rooms, emergency rooms, areas with body fluid spills.</li> <li>4. All cleaning staff has been trained on the proper techniques.</li> <li>5. The cleaning solutions used as per the manufacturer's recommendations.</li> <li>6. Resources are available to maintain clean environment.</li> <li>7. The procedures are implemented and monitored.</li> <li>8. If these procedures are contracted, or not performed inside the center, procedures are in place</li> </ol>						

	to assure that the evidence based guidelines are followed.						
SS.02 Laundry and linen services are operated according to specific procedures	<ol style="list-style-type: none"> <li>1. There are procedures for the safe processing of laundry and linen has been approved as part of the infection prevention and control program.</li> <li>2. The approved procedures include at least:                             <ol style="list-style-type: none"> <li>a. The collection of soiled linen.</li> <li>b. Labeling and cleaning of linen contaminated with hazardous material.</li> <li>c. The distribution of clean linen.</li> <li>d. QC checks (time, temperature)</li> </ol> </li> <li>3. If this procedure is contracted, or not performed inside the center, procedures are in place to assure that the evidence based guidelines are followed.</li> <li>4. Relevant staff members are oriented</li> <li>5. The procedures are implemented and monitored.</li> </ol>						

**Appendix B: Research plan**

