

Occupational health and safety in hospitals accreditation system: the case of Lebanon

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Introduction: Hospital accreditation can be an incentive to improve occupational health and safety (OHS) performance.

Objective: This study assesses the relationship between status of accreditation among private Lebanese hospitals and compliance with OHS accreditation standards.

Methods: A survey was administered to 68 private Lebanese hospitals to assess accreditation status and specific indicators related to each of the 9 OHS codes in the Lebanese accreditation manual. Chi-square, Fisher's exact test, and independent sample *t*-tests compared the OHS standards between accredited and non-accredited hospitals.

Results: Fifty-six percent of participating private hospitals were accredited. Accredited hospitals reported statistically better OHS performance than non-accredited hospitals based on the standards outlined in the accreditation manual. However, there was inconsistent performance on numerous OHS indicators among participating hospitals.

Conclusion: The gaps in OHS performance suggest the need for strengthened OHS guidelines in the national accreditation process to safeguard workers' health. Strategies to fortify OHS performance include tying service reimbursement to OHS compliance and linking OHS standards with national labor legislation.

Keywords: Hospitals, Accreditation, Occupational health and safety, Lebanon

Background

Health care accreditation sets standards for organizational performance and assesses whether these standards are met in health care service-providing institutions such as hospitals, dispensaries, and clinics. Accreditation is often viewed as a health care quality improvement tool; measuring institutional performance against progressive and attainable markers of success.¹ This process is administered by governments in some nations (i.e. Italy, France, and Lebanon) or by independent evaluation bodies in others (i.e. United States and Canada).

Governmental bodies are interested in monitoring and regulating hospital services to ensure that minimal standards of safety and quality of care are being delivered.¹ Public health agencies are increasingly employing accreditation as a tool to carry out these regulatory activities, seeking standardization of care and practices across the health sector. Evidence suggests that hospital accreditation may lead to improved patient safety, safeguarding patients' rights and their involvement in care decisions, improved public confidence, continuous improvement by health care

administrators and staff, increased staff satisfaction with working conditions, and enhanced employee safety and security.^{1, 2} While there are positive signs, there is also evidence of the limits of accreditation.³ Faced with this process, many institutions act opportunistically, engaging in compliance activities in the months just prior to review, in lieu of long-term policies and programs that might have lasting impacts on institutional outcomes.⁴

Hospital accreditation in Lebanon

Lebanon is a small Mediterranean country with a population of approximately 4.5 million. Residents are served by 136 private hospitals and 28 public hospitals run by the Ministry of Public Health (MoPH). National accreditation of hospitals began in 2001–2002 when the Lebanese MoPH developed and implemented the first accreditation policy in the Middle East region with the assistance of an Australian consultant team.⁵ One hundred and twenty-eight hospitals were evaluated in 2002 and only 47 were accredited. In 2004, the initial accreditation standards were revised to include structures, processes available at hospitals and health care outcomes. Subsequent to this revision, 142 hospitals were audited and 85 were awarded

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accreditation.⁵ The third and latest round of accreditation was completed in 2011 and indicated improved hospital performance in many areas. Lebanese health care administrators and workers reported perceived improvements in quality, safety, and patient satisfaction in their hospitals as a result of the process.⁶ Beyond improved care quality and patient safety, accreditation has positioned the MoPH to influence and regulate the private sector.⁴ This shift in the role of the MoPH represents a marked change from years past, where it exercised little influence over private health care institutions.⁷ The current legislation entitles the MoPH “to evaluate, classify and accredit hospitals according to their status, field of specialty and range of services provided” (Article 7 of the amendment decree 1983 of the 1962 legislation).⁵

Long-standing political instability and wars have destabilized Lebanon, with consequences for the health care sector. Ineffective state governance has fueled an unregulated private health care sector.⁷ The national accreditation system effectively ceded some control from the private sector to the government, utilizing an incentive system that tied accreditation with reimbursement for care.⁶ Incentive systems were useful in Lebanon because the preceding social, political, and economic climate-fostered market failures that did not incentivize improvements in private health care.⁶ Even within the present accreditation system, market failures persist in key areas of health care performance where payment schemes are not tied to performance.^{8–10}

Accreditation and occupational health and safety

Occupational health and safety (OHS) is one area where market failures are a possibility, as there are few financial incentives and limited governmental oversight to ensure workplace safety in Lebanon. The discussion of OHS in accreditation discourse is scarce in international literature. This is a reasonable oversight given the origins of the accreditation process: economically wealthy countries with strong legislative frameworks protecting workers, established judiciaries, labor unions, and OHS agencies, all of which pressure health care service providers to follow OHS codes or face punitive penalties (i.e. lawsuits, workers compensation, and rising insurance premiums). In many ways, the inclusion of OHS standards in Lebanon’s accreditation manual may speak to the limited extent to which other governmental agencies and workers’ advocate organizations have been able to influence labor practices within the health care industry.

However, OHS improvements would have tangible benefits for stakeholders. Studies suggest that improvements in workplace health and safety of staff lead to higher quality of clinical care and improved patient safety.^{11–13} A study by Gimeno et al. (2005) found that public hospitals in Costa Rica, not conducting safety trainings for employees, reported 41% more injuries when compared to

those conducting trainings.² Moreover, evidence points to accreditation positively impacting OHS outcomes including the development and promotion of better risk management programs, motivation of staff, and reduction of staff turnover.¹⁴ Salmon et al. (2003) found that accreditation in some South African public hospitals significantly improved compliance with hospital safety standards and increased hospital OHS scores.¹⁵

The hospital workforce is exposed to many hazards in the workplace that may pose immediate harm to their health and well-being and can have wide-ranging consequences for the quality and efficiency of hospital care.^{16,17} OHS programs have been the principal organizational response to identify these hazards and proactively minimize their impact on the hospital workforce.

These programs are necessary because occupational injuries and illnesses lead to worker absenteeism, translating to additional pressures on other hospital workers, poorer patient outcomes, and higher costs for hospitals.¹⁸ OHS programs address these issues in a systematic way, assigning an OHS officer to oversee monitoring of hazards, planning an OHS strategy, and providing health and safety training for hospital staff.¹⁹

Research into the impact of OHS programs in hospitals has shown the benefits to include cost savings and lower worker absenteeism. Studies have shown that reducing health risks at work are likely to reduce worker absenteeism and their incurred costs.²⁰

Lebanon’s accreditation manual includes 593 standards, 9 of which are related to OHS.²¹ Although other standards in the manual are cross-cutting with OHS issues, this number is still low and misses important areas of OHS evaluation (see discussion). Further, hospitals that have met the accreditation status may not have fully met all the standards on OHS, as the OHS standards are not mandatory. Detailed information on hospital accreditation performance is not made public, making it difficult to establish the effectiveness of accreditation at improving OHS investment within participating institutions.

Study objectives

This study assesses the relationship between hospital accreditation status and compliance with MoPH’s OHS standards. The analysis highlights the overall performance of private Lebanese hospitals on these OHS standards, while also comparing OHS compliance between accredited and non-accredited hospitals.

Methods

Private hospitals were selected as they represent the vast bulk (83%) of health care institutions in the country.²² A database of all private registered hospitals in all six governorates in Lebanon ($N = 138$) was compiled using a list obtained from the Syndicate of Lebanese Private Hospitals in 2011. Elderly nursing homes and orphanages were excluded from the study, resulting in 127 eligible

Table 1 Basic descriptive statistics of participating hospitals (N = 68)

	Total		Accredited 38 (56%)	Not accredited* 30 (44%)
	N	%	n (%)	n (%)
Hospital location				
Main cities	43	63.2	24 (63.2)	19 (63.3)
Villages	25	36.8	14 (36.8)	11 (36.7)
Hospital size				
Small-sized (≤ 100 beds)	39	57.4	17 (44.7)	22 (73.3)
Medium- to large-sized (> 100 beds)	29	42.6	21 (55.3)	8 (26.7)
Total Number of beds, Mean \pm SD	112.5 \pm 102.1		142.4 \pm 122.6	74.47 \pm 47.3
Teaching status of the hospitals				
Non-teaching	52	76.5	29 (76.3)	23 (76.7)
Teaching	16	23.5	9 (21.1)	7 (23.3)

*Category of Not accredited include Hospitals that are in process of pursuing accreditation ($n = 26$), applied for accreditation and was rejected ($n = 3$), and never applied for accreditation ($n = 1$).

hospitals. Eligible hospitals were contacted by phone to invite them to participate in the study. Data collection started in February 2011 and ended in March 2012. Of the 127 eligible hospitals, 46 refused to participate due to lack of time or unwillingness to participate often because the hospital was going through the process of accreditation at the time of the survey, and 13 initially agreed to participate, however they withdrew their participation prior to the interview. In total, 68 hospitals participated with a 53.5% response rate.

Once hospital administration confirmed participation, the survey instrument was mailed to all consenting hospitals and was followed by a 30-min face-to-face interview with the hospital's officer in charge of OHS issues. Before conducting each interview, an informed consent document was explained to and signed by the hospital's administration and the OHS officer, interviewed. The study was approved by the American University of Beirut Institutional Review Board.

Measures

Hospitals were asked about their accreditation status and were categorized into 'Accredited' ($n = 38$) or 'Not Accredited' ($n = 30$, which included 26 hospitals in the process of accreditation, 3 hospitals which failed in attaining accreditation, and 1 which never applied). The research team designed indicators (yes/no) to assess compliance with each of the nine OHS codes in the accreditation manual:²³

- (OH1) availability of an OHS Officer;
- (OH2) establishment of an OHS committee;
- (OH3) availability of employees' health and safety program;
- (OH4) existence of a policy and procedure manual describing the OHS system/service at the hospitals;
- (OH5) exposure of staff to OHS information;
- (OH6) accident/incident reporting and their resolution procedure;
- (OH7) availability of evidence of OHS data;
- (OH8) availability of an OHS hazard identification audit; and
- (OH9) availability of a hazard reporting system.

Statistical analysis

Descriptive analysis was used to describe the study sample. Categorical variables are presented as counts and percentages. Accredited and non-accredited hospitals are compared using the chi-square test or Fisher's exact test. Continuous variables are presented as means and standard deviations, and hospitals were compared using independent sample *t*-tests. Statistical analyses were performed using Stata10 statistical software. All tests with a two-tailed *P*-value less than 0.05 were considered significant.

Results

Table 1 presents basic descriptive statistics about hospital size, location, and teaching status. Approximately 63% of hospitals were located in cities, with the remainder in rural areas. Nearly 43% of hospitals had more than 100 beds. Of the hospitals with more than 100 beds, 38% were teaching institutions and 72% were accredited. The 57% of hospitals with fewer than 100 beds were less likely to be accredited (44%), and only 5 (13%) were teaching institutions (Data not shown in Table 1). Hospitals that refused to participate ($N = 59$) mostly provided short-term care ($n = 42$; 75%), had less than 100 beds ($n = 38$; 68%), and were generally located outside the capital city ($n = 46$, 78%). Further, the majority of the hospitals that refused to participate were accredited ($n = 48$, 85.7%) (Data not shown in table).

Tables 2–4 report results on private Lebanese hospitals' performance on indicators related to the OHS national accreditation manual codes. The findings include responses for 38 accredited hospitals and 30 non-accredited hospitals.

Data in Table 2 show that all accredited hospitals reported employing an OHS officer; however only around 10% of the officers in accredited and non-accredited hospitals were employed solely as OHS officers. The work experience for officers in accredited versus non-accredited hospitals varied. Fifty-three percent of OHS officers in accredited hospitals had been working in their OHS position for more than four years compared to 23% in non-accredited hospitals. The mean length of employment

Table 2 Indicators of private hospitals' compliance with OHS codes (1 to 4) in the Lebanese accreditation manual

	Total		Accredited 38 (56%)	Not accredited 30 (44%)	P-value
	N=68	%	n (%)	n (%)	
(OH1) Availability of an OHS officer					
Presence of an OHS officer	68	100.0	38 (100.0)	30 (100.0)	
OHS officer hired solely for the OHS job/position	8	11.8	5 (13.2)	3 (10.0)	1.00
Number of years in OHS position					
≤1 year	23	33.8	10 (26.3)	13 (43.3)	0.20
1.1 to 4 years	22	32.4	12 (31.6)	10 (33.3)	
>4 years	23	33.8	16 (53.4)	7 (23.3)	
Number of months in OHS position, Mean ± SD		43.8±44.2	56.5±51.5	27.7±25.6	0.01
(OH2) Establishment of an OHS committee					
Presence of an OHS committee	67	98.5	38 (100.0)	29 (96.7)	0.44
Committee members trained on OHS principles					
Yes, all	34	50.0	24 (63.2)	10 (33.3)	
Yes, some	31	45.6	14 (36.8)	17 (56.7)	0.01
None	3	4.4	0 (0.0)	3 (10.0)	
Committee members trained in one of the following topics related to OHS					
OHS policies and procedures	60	88.2	37 (97.4)	23 (76.7)	0.02
Workplace safety inspection	53	77.9	31 (81.6)	22 (73.3)	0.42
Committee members trained on how the OHS program functions in their respective hospital	51	75.0	32 (84.2)	19 (63.3)	0.05
(OH3) Availability of employees' health and safety program					
Presence of an operational OHS program	66	97.1	36 (94.7)	30 (100.0)	0.50
(OH4) Existence of a policy and procedure manual describing the OHS system/service at the hospitals					
Existence of clearly stated OHS policies and procedures	68	100.0	38 (100.0)	30 (100.0)	
Existence of policies and procedures for employee illness	61	89.7	36 (94.7)	25 (83.3)	0.23

P-Value entries in boldface indicate a significant relationship (P-value < 0.05).

in these positions was 57 (±51.5) months and 28 (±25.6) months, respectively, in accredited versus non-accredited hospitals (Table 2).

All accredited hospitals had established an OHS committee, with 96% of hospitals providing at least some members of their committee with OHS training. However, there were significant differences between accredited and non-accredited hospitals on the amount and type of training offered to members of the committee: receiving training in OHS policies and procedures (97% vs. 77%), training in workplace safety inspection (82% vs. 73%), and training on the functioning of OHS programs in their hospital (84% vs. 63%) (Table 2).

Only two hospitals reported not having an operational OHS program (both accredited), while all hospitals reported having clearly stated OHS policies and procedures. However, the extent of these procedures did not always outline practices relating to basic occupational health matters, such as how to address employee illness (5% of accredited hospitals and 17% of non-accredited hospitals) (Table 2).

Data in Table 3 show that all hospitals reported providing training to their staff, with the percentage of hospital staff trained in OHS similar between accredited and non-accredited hospitals. However, the extent of this training did not meet the expectations outlined by accreditation. Although not statistically significant, the differences

Table 3 Indicators of private hospitals' compliance with OH codes (5 to 9) in the Lebanese accreditation manual

	Total		Accredited 38 (56%)	Not accredited 30 (44%)	P-value
	N	%	n (%)	n (%)	
(OH5) Exposure of staff to OHS information					
Hospital staff trained on OHS matters	68	100.0	38 (100)	30 (100)	
Percent of hospital staff trained on OHS issues, Mean ± SD		79.3 ± 27.33	81.3 ± 25.0	76.8 ± 30.2	0.50
Hospital staff trained on:					
Risk management	57	83.8	34 (89.5)	23 (76.7)	0.19
Radiation safety	59	86.8	35 (92.1)	24 (80.0)	0.17
Bio-safety	54	79.4	33 (86.8)	21 (70.0)	0.09
Handling of dangerous goods	47	69.1	28 (73.7)	19 (63.3)	0.34
Hazardous substances	56	82.4	34 (89.5)	22 (73.3)	0.11
Office safety	56	82.4	37 (97.4)	19 (63.3)	<0.00
(OH6) Accident/incident reporting and their resolution procedure					
Existence of a form for reporting incident/accident	67	98.5	38 (100.0)	29 (96.7)	0.44
Information collected on the report form include:					
Incident/accident without reported injuries	6	8.8	2 (5.3)	4 (13.3)	0.39
Incident/accident with reported injuries or material damage	37	54.4	18 (47.4)	19 (63.3)	0.19
Type of external event	13	19.1	8 (21.1)	5 (16.7)	0.65
(OH7) Availability of evidence of OHS data					
Usage of a unique report form for all types of work incident/accident throughout the hospital	65	95.6	37 (97.4)	28 (93.3)	0.58
(OH8) Availability of an OHS hazard identification audit					
Frequency of carrying out OHS hazard identification audits					
Less frequently (every 12 months or more)	48	71.6	26 (68.4)	22 (73.3)	
Frequently (every 3 or 6 months)	19	28.4	12 (31.6)	7 (23.3)	0.59
(OH9) Availability of a hazard reporting system					
Availability of hazard communication system	62	91.2	35 (92.1)	27 (90.0)	0.76

Note: P-Value entries in boldface indicate a significant relationship (P -value < 0.05).

in reported compliance were apparent, when comparing accredited and non-accredited hospitals: on risk management in general (90% vs. 77%), and also specifically on radiation safety (92.1 to 80%), bio-safety (87 to 70%), handling dangerous goods (74 to 63%) or hazardous substances (90 to 73%), and office safety (97 to 63%) (Table 3).

All participating hospitals with the exception of one non-accredited hospital reported having a form for reporting incidents or accidents. However, these forms often did not include data on many types of incidents: 95% of

accredited and 87% of non-accredited did not collect information on accidents or incidents if no injury occurred. For all hospitals, data were not collected on incidents with reported injuries or material damage 54% of the time and for external events only 19% of the time (Table 3).

Hospitals compiled incident/accident reports in 97% of accredited hospitals and 93% of non-accredited hospitals, and over 93% of accredited and non-accredited hospitals made available an annual report for hospital-wide OHS data. Annual hospital-wide OHS hazard identification audits were not conducted in 5% of accredited hospitals

Table 4 Other indicators of private hospitals' OHS performance that are not included in the accreditation manual

	Total		Accredited 38 (56%)	Not accredited 30 (44%)	P-value
	N	%	n (%)	n (%)	
Practices and safety measures introduced to hospital:					
Sharps management systems – such as needleless systems to prevent needle sticks and safe injection practices to prevent transmission of infections to patients	66	97.1	38 (100.0)	28 (93.3)	0.19
Work organizations – such as job rotation to minimize hazardous exposure to one particular worker	47	69.1	29 (76.3)	18 (60.0)	0.15
Introduction of equipment to help minimize ergonomic problems – such as a medical chair for back pain	38	55.9	23 (60.5)	15 (50.0)	0.38
Mandatory vaccination (for HBV and MMR)	59	86.8	33 (86.8)	26 (86.7)	0.90
Emergency preparedness – fire alarms and radiation emergencies	60	88.2	37 (97.4)	23 (76.7)	0.02
Presence of an incentive system at the hospital for workers' compliance with OHS standards	19	28.4	13 (34.2)	6 (20.0)	0.22

Note: P-Value entries in boldface indicate a significant relationship (P -value < 0.05).

and in 10% of non-accredited hospitals. Most accredited hospitals (68%) and non-accredited hospitals (73%) conducted OHS hazard identification audits less than once every 6 months (Table 3).

The study's assessment of other OHS indicators returned a mixed response (Table 4). The vast majority of hospitals had a sharp management system (97.1%). However, other programs were less systematically implemented: work organization interventions (76% of accredited and 60% of non-accredited hospitals); ergonomic equipment (61 and 50%); mandatory HBV and MMR vaccinations (87% in accredited and non-accredited hospitals); and emergency preparedness plans (fire alarms and, radiation emergencies) were deployed in 97% of the accredited hospitals and 77% of the non-accredited ones. Only 34% of accredited hospitals and 20% of non-accredited hospitals had developed incentives systems to encourage and ensure workers' compliance with established OHS standards. Similarly, a little over 50% of the hospitals reported allocating resources specifically for OHS issues (Table 4).

Discussion

The findings show that accredited private hospitals reported better OHS performance than non-accredited hospitals. This association was noted in spite of a potential bias since the comparison group of not-accredited hospitals consisted mostly of hospitals (26/30) which were in the process of accreditation, and hence may be addressing the occupational health indicators more carefully. Studies undertaken in Lebanon have traditionally focused on the impact of hospital accreditation on organizational management and patient safety, and reported a positive impact.^{5,24} This study is the first to assess the effect of accreditation on hospital OHS within the country, offering insights into the limitations of the current system and recommendations for its improvement. Moreover, these results support the

internationalization of accreditation, offering the experiences from a developing country that does not share a great deal with the Western countries from which the accreditation framework was developed. In fact, accreditation in Lebanon has been used in an innovative way to interpret and implement existing legislative frameworks to improve hospital care while working on wider reforms in the health care industry (Director General of the Ministry of Public Health in Lebanon, personal communication, December 2015).

One major finding of the study is that while accredited hospitals averaged better performance, there are still significant gaps in their OHS programs, highlighting reasons for concern about the quality of OHS compliance among some accredited private hospitals. Nearly all hospitals reported having the basic elements of an OHS program – such as an OHS officer, committee, trainings, and reporting system. However, optimism about these results was tempered by the other findings of the study, which suggest that many of the hospitals lacked substantive components in their OHS programs. In particular, accredited hospitals underperformed in areas of OHS training and education, reporting and compliance. Supporting these observations are low reports of hospitals dedicating resources to OHS activities, full-time OHS staff, and compliance incentive systems – without which it is difficult to have comprehensive and effective OHS programs.

High OHS standards are not a marketing highlight for care recipients. Without a market incentive to improve health and safety standards for health care workers, there is little reason for administrators of these institutions to invest in OHS programs. Without these incentives, regulatory agencies are doubly needed to encourage fair work arrangements and safe and healthy workplace conditions for the health care workforce. The shortfalls of accredited hospitals OHS performance demonstrate ineffectiveness

in the accountability mechanism in the accreditation process. Accreditation can offer some incentives for improving OHS performance; for example, hospitals that show an overall higher performance on accreditation standards will receive higher payouts for services completed for state-administered health insurance programs, including those by the MoPH.

It is worth noting that a good portion of accredited hospitals reported inadequate OHS programs as shown in the findings of our study. To address these shortfalls, the MoPH could emphasize the importance of abiding by the OHS codes by making even partial compliance, such as the completion of two-thirds of OHS criteria, mandatory to receive accreditation. Additional incentives may include tying MoPH funding to proactive OHS policies at private hospitals.

Furthermore, the MoPH can seek to strengthen inter-governmental agency cooperation by collaborating with the Ministry of Labor to link hospital OHS standards to general labor legislative frameworks. In particular, the hospital accreditation standards can be strengthened by explicitly underscoring the responsibilities of hospital ownerships to maintain a clean and safe workplace that promotes the health of its workers and staff. The accreditation standards can also touch on hospitals' provision of workers' compensation insurance and affordable health care coverage to their workforce as well as other specific OHS obligations of health care institutions that build upon national and international labor conventions and regulations.

One of the limitations of this study is its inability to assess the hospitals' finances and their ability or willingness to invest in OHS. Financial information is not publicly available, and hospitals were not willing to share such information. Without accounting for the financial status of a hospital and its ability to invest in OHS, it is difficult to fully evaluate the observed OHS performance among accredited hospitals. A second limitation was the relatively low response rate. While we received support from the Syndicate of Lebanese Private Hospitals which encouraged private hospitals to participate in a formal letter, many hospitals refused to participate. A third limitation of the survey was that its results were based on self-reporting, which may be a substantial source of bias or inaccuracies, including social desirability bias (providing answers that positively reflect on the respondents in their occupation as OHS officers).

Conclusion

Despite these limitations, the survey provides baseline information pointing to both the importance of having resources already dedicated to OHS in hospitals and the existence of policies and guidelines. However, there is a need for more rigorous research to identify the strengths and weaknesses of OHS processes and resources in Lebanese private hospitals and identify points of entry for

training or support. Further research should also explore whether hospital accreditation is actually linked to lower rates of work-related injuries and diseases. Specifically, in-depth studies, such as workforce surveys and contextual analysis, might elucidate hospitals' varying commitment to OHS among management, relative hospital wealth and availability of capital, levels of incoming staff training, or other factors that may indirectly affect OHS outcomes.

Improving hospital OHS programs is an imperative, both for the hospital workforce and patients. Yet, lacking an incentive or enforcement mechanism, hospitals are unlikely to invest in these programs. Improving OHS compliance through the accreditation process is critical and if adopted, will substantiate the government's and MoPH's commitment to hospital workers. In fact, in other areas of hospital service provision, accreditation performance has been monetarily incentivized in Lebanese hospitals.⁴ If extended to OHS, this model offers an opportunity for improving OHS compliance by hospitals. The Lebanese Ministry of Public Health is currently revamping the hospital accreditation system including the codes and standards, making this an opportune moment to act. With an incentive system for OHS compliance and by linking OHS standards with general labor laws in the country, the OHS component of the accreditation process will become a more meaningful means to improve workplace safety and health in Lebanon's hospitals.

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No potential conflict of interest was reported by the authors.

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