Komisi Akreditasi Rumah Sakit

Journal of Hospital Accreditation, 2023
Vol 05, Edisi 2, hal 91-98
Tanggal Publikasi, 30 Juli 2023

## Original Article

# EXPLORING THE FACTOR EXPLAINING THE CONTINUITY OF HOSPITAL ACCREDITATION STANDARD ADOPTION IN INDONESIA

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Submitted 3 June 2023, Accepted 15 July 2023

**Abstract**

**Background:** Hospital accreditation has been widely adopted to stimulate continuous quality improvement. Hence, understanding the factors that determine hospital capability to continuously maintain its accreditation status is critical.

**Objective:** This study aimed to explore the continuity of hospital accreditation status and its association with hospital characteristics and geographical disparities

**Methods:** A three-year cohort of accredited hospitals in the year 2012-2014 was used. Hospital accreditation status, reaccreditation status at three years post accreditation (2015-2017) and their timeliness and improvement of accreditation status were recorded from the hospital accreditation report managed by the Indonesian Commission on Accreditation of Hospitals. Cross-tabulation of the outcome variables with hospitals characteristics (classification, ownership, specialty hospital) and geographical area was performed, followed by a multiple logistic regression analysis to investigate determinants of the reaccreditation

**Results:** Of the 461 hospitals accredited in the year 2012-2014, only 73% undertook the reaccreditation survey. At reaccreditation, 27% of the hospitals were reaccredited timely and 65% showed improved accreditation status. Higher hospital class, general hospitals, public hospitals, and their location in Java-Bali islands tended to have higher proportion of timely accreditation and improved accreditation status at reaccreditation. The logistic regression analysis confirmed that hospital class and those located in Java-Bali were significant determinants for continuity of hospital accreditation status.

**Conclusion:** The low proportion of hospitals with continuous accreditation status within three years reaccreditation cycle is influenced by the hospital classification and provincial gap. This study suggested a step-wise quality regulation strategy focusing on developing a continuous quality improvement culture.

**Keywords:** Hospital accreditation, External evaluation, Quality improvement, Determinant factors, Low middle-income countries

## Introduction

Hospital accreditation policy has been widely adopted as an external quality assurance mechanism that does not merely assess compliance to the established standards but furthermore, serves as a strategy to implement continuous improvement.[1] Accordingly, as a capacity-building tool to stimulate continuous quality improvement (CQI), accreditation should be integrated into the hospital quality management system (QMS) and national healthcare quality framework.[2–4] When accreditation is only perceived as an administrative

requirement, the benefit will be limited to short-term compliance toward standards instead of CQI as the primary process.[2,3]

While hospital accreditation has increasingly been studied globally, the emphasis was focused on determining the benefits of accreditation on quality management process, process of care, and patient outcomes. Less attention was paid on the continuous improvement aspect which in fact is the core philosophy of accreditation.[1,5] Studies on the implementation of CQI strategies clarified some critical factors for successful adoption, such as top management commitment and leadership role, human resource focus, process management, quality data and reporting, strategic quality management, which were influenced by different organizational characteristics.[6–8] Hospital characteristics such as size, university affiliation, geographic location, and service type could intervene in the effect of accreditation on continuous improvement.[7,9] In addition to internal health care organizational factors, implementation of CQI is strongly influenced by the health system context, such as health financing, accreditation policy, facilities and resource allocation that will shape the organizational motivation and capacity to adopt improvements.[9]

Recently, more publications explored the specific context of hospital accreditation in the Low-to-Middle Income Countries (LMIC), including countries in South East Asia, but reporting from Indonesia is still limited.[4,10,11] Indonesia has started the hospital accreditation program since 1995 by the Indonesian Commission on Accreditation of Hospitals (KARS) which later became a more independent agency in the year 2014.[10,12] Under the Indonesian Hospital Act (2009), accreditation is mandatory and required for hospital re-licensing after three years following the first license issued. Additionally, the role of accreditation became a safeguarding policy mechanism since implementation of the Universal Health Coverage (UHC) in 2014 because it is one of requirements in credentialing hospitals to renew their contract with the Social Security Agency for Health (SSAH). This policy exhibits strong emphasize on the importance of hospital accreditation to protect the community as well as to provide a competitive advantage in a global health care market era.[10,12]

To improve the accreditation system, the KARS undertook ISQua certification and received an award for an exemplary hospital accreditation organization in 2014 and 2019, followed by certification for the surveyor training program in year 2017, and for the accreditation standards in year 2019. Throughout the years, hospital accreditation standards in Indonesia have evolved becoming more integrated and patient-focused. The previous Indonesian hospital accreditation standards (1995-2012) consisted of seven generic quality management standards, with specific parameters for each service unit or department. Starting in late 2012, the KARS introduced a new set of standards, which was translated from the Joint Commission International (JCI) standards for hospital accreditation[10], and applied for all hospitals regardless of their size and types. The standards place more emphasis on the process of care and are intended to ensure quality and safety of the hospital as an integrated care system. Aimed to incorporate CQI, the current hospital accreditation system is implemented in a three-year cycle, with an annual verification survey to ensure CQI standards.[13]

Large variation of hospitals coupled with wide geographical and socioeconomic disparities challenge the Indonesian health care system to ensure that all hospitals are not merely able to comply to the established accreditation standards but also to continuously improve their quality. To illustrate the extreme variation, a small-size, specialist hospital with 25 beds and two full-time physicians up to a tertiary care teaching hospital with more than 1,000 beds and hundreds of specialist physicians are present in Indonesia.[14] Hence, it is critical to understand the organizational as well as external factors that determine hospital capability to continuously improve as reflected through the hospital accreditation program. This study aimed to describe the continuity of hospital accreditation status and further explore its association with the hospital characteristics (classification, ownership, service type), and geographic location. We specifically investigated the hospital accreditation status within the period of 2012-2017 to identify re-accredited hospitals' timeliness and improvement status for the first three-year cohort (2012-2014).

## Methods

We performed a three-year consecutive cohort study of hospitals accredited in the year 2012-2014 to identify their continuity of accreditation status at reaccreditation. The reaccreditation status was determined using their latest status by the end of 2017, and used to investigate the factors influencing continuity of hospitals accreditation status.

Indonesia, the largest archipelago in the world with 252 million people, is divided into 34 provinces with 416 districts and 98 municipalities having an equal administration but different levels of autonomy. To serve the population, health services are delivered through a network of 9,825 primary health centres, 7,641 private clinics and 2,779 public and private hospitals which vary in terms of types, levels of care provided, size, and classes.

By the year 2017 there were 2,779 hospitals listed in the national hospitals database managed by the Ministry of Health (MoH). Most of the hospitals are general hospital (2,200; 79.2%), private owned (992; 35.7%) with half of them located in the Java-Bali islands (1,409; 50.7%). Referring to the three-year hospital accreditation cycle, the baseline data for this study was all accredited hospitals in the year 2012-2014 (461) that should have been re-accredited in the next three-year period (2015-2017).

Two national databases were used in this study. First, the hospital accreditation report provided by KARS consists of baseline information and the latest accreditation status of all registered and accredited hospitals. The second database is the national report managed by the MoH that provides information related to hospital characteristics such as name, location, owner, service type, classification, facilities, human resources, and the number of hospital beds. This information is routinely updated for any changes made.

Hospital accreditation status and the continuity of hospital accreditation status in terms of time and accreditation improvement status were determined as the outcome variables. The characteristics of the hospital (classification, ownership, service type) and geographic location were recorded as the independent variables.

Based on the 2012 hospital accreditation standard, the hospital accreditation status was determined based on the number of standards that met the minimum passing grade (80%), i.e. 5 for basic, 8 for intermediate, 12 for prime, and 16 for excellent accreditation status. Additionally, in 2014 the KARS launched a

special accreditation status, i.e. initial status, eligible only for first time accreditation of hospitals with class C and D which were surveyed using five standards (patient safety goals, quality improvement and patient safety, governance and direction, patient and family right, patient education) out of the total 16 standards.

We defined the continuity of hospital accreditation status as the hospital compliance with the reaccreditation cycle (i.e. timeliness and improvement status). The reaccreditation continuity was categorized as timely when the hospitals were reaccredited within the next three-year period after the first accreditation survey. Change of hospital reaccreditation status was classified into the following: 1) remain at excellent status, 2) improved up to excellent status, 3) steady to their previous partial accreditation status, and 4) decline. We divided these categorizes into two dichotomies, i.e. improved when the status is improved or remain at the excellent status, and not improved when the status is steady or decline.

Five independent variables included in the analysis were: hospital characteristics by class (A, B, C, D), ownership (government, non-government), type (general, specialist), and geographic location (by provincial groups of Java-Bali and outer Java-Bali provinces; and by district location, i.e. urban or rural). Hospital classification refers to the hospital size and capability as it is determined by the MoH based on the services provided, human resources, equipment, and facilities.

A class "A" hospital is the national referral hospital providing a full range of specialist physicians, in contrast to the lowest class (D) that served as a first level community hospital with one specialist physician only. Considering the wide geographic and socioeconomic disparities, the hospital location variable was categorized into two groups, i.e. Java-Bali and outside Java-Bali hospitals. Populations in Java-Bali islands represent 57.5% of the total population in Indonesia. The urban and rural locations were classified based on their administrative areas according to the Ministry of Internal Affairs.

The hospital accreditation status and characteristics from the KARS database were matched with the national hospital database from the MoH. Each discrepancy identified was solved by referring to the current hospital web profile. We performed a cross-tabulation analysis to describe the progress of reaccreditation by year and improvement status related to the hospital characteristics and geographic distribution. A multiple logistic regression analysis with the subset data (n=332), of the reaccredited hospitals and excluding the hospitals with undetermined class (n=6) was done using IBM SPSS version 23 to explore the factors predicting the continuity of the hospital accreditation standards adoption. The two scales of hospital reaccreditation continuity in terms of timeliness and improvement status were used as the dependent variables for this analysis.

The study protocol has been approved by the Medical and Health Research Ethics Committee, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta Indonesia (KE/FK/0896/EC/2017)

## Results

*Hospital accreditation status in Indonesia*

The number of newly accredited hospitals within the period of 2012-2017 reveals a decreasing trend up to 2015, followed by a recovering trend in the last two years (Table 1). While the number of new accredited hospitals tended to increase, it is dominated by hospitals with initial and basic accreditation status (55% and 49% in 2016 and 2017, respectively). An increasing trend was noted in the total number of hospitals with valid accreditation status in each year, with a maximum percentage of 55% hospitals accredited at the end of year 2017.

*The continuity of hospital accreditation adoptions*

With the three years accreditation cycle, there were 461 accredited hospitals in 2012-2014 that should have been reaccredited in the years 2015-2017. The data showed that 73.3% (338) of these eligible hospitals were reaccredited but only one-third of them (90, 26.6%) were reaccredited timely (Table 2). Only a small percentage (6.6%) of the hospitals accredited in 2012 managed to be reaccredited timely in 2015. While there were only a low portion of hospitals that were accredited in year 2013 and 2014, most of them were reaccredited timely (60% and 83%). After five years, 29% of the hospitals accredited in the year 2012 were still not reaccredited yet

Table 1. Hospital accreditation status in Indonesia: 2012-2017

| Year | Number of Hospital | Number of new accredited hospitals and proportion of total hospitals newly accredited in a given year | | | | | | Hospital with valid accreditation status of the total hospital (%) |
|---|---|---|---|---|---|---|---|---|
| | | Initial | Basic | Intermediate | Prime | Excellent | Total | |
| 2012 | 2083 | - | 333 (88.30) | 0 (0.00) | 18 (4.77) | 26 (6.90) | 377 (18.10) | 878 (42) |
| 2013 | 2228 | - | 0 (0.00) | 1 (5.00) | 1 (5.00) | 18 (90.00) | 20 (0.90) | 759 (34) |
| 2014 | 2408 | - | 8 (12.50) | 1 (1.56) | 1 (1.56) | 54 (84.38) | 64 (2.66) | 461 (19) |
| 2015 | 2490 | 38 (23.6) | 6 (3.70) | 9 (5.59) | 10 (6.21) | 98 (60.87) | 161 (6.47) | 260 (10) |
| 2016 | 2601 | 242 (52.4) | 12 (2.60) | 14 (3.03) | 20 (4.33) | 174 (37.66) | 462 (17.76) | 813 (31) |
| 2017 | 2780 | 179 (32.0) | 94 (16.80) | 41 (7.32) | 66 (11.79) | 180 (32.14) | 560 (20.14) | 1522 (55) |

Table 2. Continuity of hospitals accreditation status among cohort of hospitals firstly accredited in 2012-2014 (n=461)

| First accreditation year | Number of hospitals accredited | Reaccredited hospitals | | | | Not yet reaccredited up to 2017 |
|---|---|---|---|---|---|---|
| | | 2015 | 2016 | 2017 | Sub-Total | |
| 2012 | 377 | 25 (6.6) | 102 (27.1) | 140 (37.1) | 267 (70.8) | 110 (29.2) |
| 2013 | 20 | 2 (10) | 12 (60) | 4 (20) | 18 (90) | 2 (10) |
| 2014 | 64 | 0 | 0 | 53 (83) | 53 (83) | 11 (17) |
| Total | 461 | 27 (5.9) | 114 (24.7) | 197 (42.7) | 338 )73.3) | 123 (26.7) |

Table 3 discloses that a third of reaccredited hospitals gained improved accreditation status (220, 65%). The higher the first accreditation status showed higher proportion of improved reaccreditation status. Almost half (45%) of the hospitals with basic and initial accreditation status were unable to improve their status at the reaccreditation survey. Surprisingly, a small but significant number of fully accredited hospitals (9.2%) ended up with declining accreditation status when reaccredited.

Table 3. Improvement status among reaccredited hospitals (n=338)

| First accreditation status | | | Improvement status at reaccreditation (%) | |
|---|---|---|---|---|
| Year | Status | No. of hospitals | Improved n (%) | Not improved n (%) |
| 2012 | Basic | 227 | 122 (54) | 105 (46) |
| | Prime | 15 | 10 (67) | 5 (33) |
| | Excellent | 25 | 24 (96) | 1 (4) |
| | Total | 267 | 156 (58) | 111 (42) |
| 2013 | Prime | 1 | 1 (100) | 0 (0) |
| | Excellent | 17 | 16 (94) | 1 (6) |
| | Total | 18 | 17 (94) | 1 (6) |
| 2014 | Basic | 8 | 8 (100) | 0 (0) |
| | Excellent | 45 | 39 (87) | 6 (13) |
| | Total | 53 | 47 (89) | 6 (11) |
| Total | Basic | 235 | 130 (55) | 105 (45) |
| | Prime | 16 | 11 (69) | 5 (31) |
| | Excellent | 87 | 79 (91) | 8 (9) |
| | Total | 338 | 220 (65) | 118 (35) |

Regarding timeliness, the majority of reaccredited hospitals did not take the reaccreditation survey timely (369; 72.8%). Higher hospital class and location in Java-Bali islands tended to have higher proportion to be reaccredited timely and resulted in improved status, unlike different type of services which did not show any differences (Table 4). Nongovernment hospitals and location in urban areas also tended to have higher proportion to be reaccredited timely. A similar pattern was not found in terms of improved status at reaccreditation**.** The significant logistic regression models explaining determinants of timeliness and improvement status at reaccreditation were identified. Both models explain 35-40% of the variances and correctly classified 74- 81% of the cases (Table 5). Hospital classification, type of service provided, and urban-rural location were found to be the significant predictors of timely reaccreditation. Hospitals with higher classification, providing general service and located in urban areas have better probability to be reaccredited timely. While for the improved accreditation status, hospital classification, service type and the geographic location were the significant predictors of the improved reaccreditation status. Higher hospital class, general and private hospitals, and location in Java-Bali province and urban area increased the likelihood to have an improved accreditation status at reaccreditation.

## Discussion

*Statement of principal findings*

Our findings noted that while mandatory, not all hospitals in Indonesia (73%) were re accredited. Discontinuity of accreditation resulted in low proportion of hospitals with valid accreditation status each year (20-55%) within the period of 2012-2017. Among those which were reaccredited, only a small proportion were accomplished timely despite more than half of the hospitals showed improved accreditation status. Higher hospital classification (A and B) and their location in Java-Bali provinces were found to be the most important and consistent predictors for timely and improved status at reaccreditation. If this situation continues, hospitals that are no longer re-accredited could potentially face serious financial and social implications due to termination of their contract with the SSAH.[10] In fact, this phenomenon occurred five years after the implementation of UHC when the MoH issued a letter reminding hundreds of hospitals that they might have been at serious risk of contract termination due to expired accreditation status.

Table 4. Timeliness and improvement status at reaccreditation among cohort of accredited hospitals in the years 2012-2014 (n=461)

| Hospital characteristics | Reaccredited | | Subtotal n (%) | Not reaccredited yet n (%) | Total |
|---|---|---|---|---|---|
| | Timely reaccredited n (%) | Improved n (%) | | | |
| **Hospital class*** | | | | | |
| A | 18 (75.0) | 22 (91.7) | 24 (88.9) | 3 (11.1) | 27 |
| B | 48 (52.8) | 84 (92.3) | 91 (85.8) | 15 (14.2) | 106 |
| C | 23 (14.2) | 90 (55.6) | 162 (67.8) | 77 (32.2) | 239 |
| D | 3 (5.2) | 23 (39.7) | 58 (69.9) | 25 (30.1) | 83 |
| **Service** | | | | | |
| General | 83 (27.9) | 198 (66.4) | 298 (74.7) | 101 (25.3) | 399 |
| Specialist | 9 (22.5) | 22 (55.0) | 40 (64.5) | 22 (35.5) | 62 |
| **Ownership** | | | | | |
| Government | 31 (2.8) | 76 (69.7) | 109 (70.3) | 46 (29.7) | 155 |
| Non-government | 61 (26.6) | 144 (62.9) | 229 (74.8) | 77 (25.2) | 306 |
| **Provincial group** | | | | | |
| Java–Bali | 66 (33.3) | 121 (61.1) | 198 (77.6) | 57 (22.4) | 255 |
| Other | 26 (18.6) | 69 (49.3) | 140 (68.0) | 66 (32.0) | 206 |
| **District location** | | | | | |
| Urban | 71 (39.0) | 121 (66.5) | 182 (76.8) | 55 (23.2) | 237 |
| Rural | 21 (13.5) | 99 (63.5) | 156 (69.6) | 68 (30.4) | 224 |
| Total | 92 (27.2) | 220 (65.1) | 220 (65.1) | 123 (26.7) | 461 |

*Information for hospital class of six hospitals were not available

*Strengths and limitations*

To our knowledge, this is the first study in Indonesia using the national databases that seeks to explore the hospital accreditation status continuity and its determinants. The proportions of reaccredited hospital timeliness and status improvement were overestimated because we did not use the total number of hospitals in a given year as the denominator. The selection of accreditation status instead of score as the outcome measure in this study might overlook mild improvement, since only significant changes of the score that resulted in improved accreditation status were recognized as improvement.

*Interpretation within the context of the wider literature*

Compared to countries applying mandatory accreditation system, such as the Philippines, Taiwan, and South Korea with 80-90% percentage of accreditation uptake, the proportion of accredited hospitals in Indonesia was lower.[4] Continuous improvement was further hampered due to delay in timing and unimproved status at reaccreditation. Longitudinal studies also showed that accredited hospitals faced challenging barriers to continuously improve their performance after accreditation[15–18], hence, creating a typical cycle of performance: increasing during and declining after accreditation.[15,16] A slower improvement rate after accreditation and even discontinued performance were noted from a study conducted in Denmark.[17]

Table 5. Logistic regression analysis of hospital characteristics and continuity of hospital accreditation at reaccreditation (n=332)

| | Variables in the Equation | | | | | |
|---|---|---|---|---|---|---|
| **Variables (independent)** | **B** | **SE** | **Wald** | **df** | **Sig** | **Exp(B)** |
| **Timeliness** | | | | | | |
| Hospital Classification | | | 50.247 | 3 | .000 | |
| Class A | 2.032 | .670 | 9.188 | 1 | .002 | 7.630 |
| Class B | 3.758 | .705 | 28.382 | 1 | .000 | 42.845 |
| Class C | 5.006 | .931 | 28.911 | 1 | .000 | 149.279 |
| Service | 1.511 | .554 | 7.429 | 1 | .006 | 4.532 |
| Ownership | -.699 | .384 | 3.322 | 1 | .068 | .497 |
| Urban | .694 | .334 | 4.303 | 1 | .038 | 2.001 |
| Province | .375 | .321 | 1.365 | 1 | .243 | 1.454 |
| Constant | -2.067 | .628 | 10.847 | 1 | .001 | .127 |
| $X^2$ | 106.431 | | | | $p < 0.001$ | |
| Nagelkerke $R^2$ | .40 | | | | | |
| N | 332 | | | | | |
| **Improvement** | | | | | | |
| Hospital Classification | | | 45.127 | 3 | .000 | |
| Class A | 3.847 | .931 | 17.064 | 1 | .000 | 46.847 |
| Class B | 3.376 | .539 | 39.197 | 1 | .000 | 29.263 |
| Class C | 1.128 | .357 | 9.970 | 1 | .002 | 3.091 |
| Service | 1.151 | .460 | 6.270 | 1 | .012 | 3.161 |
| Ownership | -.089 | .338 | .069 | 1 | .793 | .915 |
| Urban | -.555 | .304 | 3.325 | 1 | .068 | .574 |
| Province | 1.187 | .288 | 16.928 | 1 | .000 | 3.276 |
| Constant | -2.180 | .606 | 12.929 | 1 | .000 | .113 |
| $X^2$ | 99.149 | $p < 0.001$ | | | | |
| Nagelkerke $R^2$ | .35 | | | | | |
| N | 332 | | | | | |

Continuous improvement as a result of the hospital accreditation program is a result of a complex interrelated system and policies of the three important stakeholders involved, i.e. the hospital, accreditation body, and the government. At the hospital level, our study identified that low resource hospitals (small class, located in rural area) were associated with lower proportion of timely and improved reaccreditation status which infer capacity barriers such as limited human resources, financial support, and facilities. This finding was similar in other LMICs such as Thailand, Pakistan, Lebanon, and South Africa.[4,19–21] Regarding the financial barrier, one study in Indonesia noted that the majority of costs (96%) are laid for investment to meet the structural requirements[22], a pre-requisite that should have been met in the licensing process.[23] Challenges in the number of human resources, coupled with underlying philosophy and CQI method.[3,9] their unequal distribution in Indonesia[10,12], create a less appropriate structure of QMS implementation which could further hinder the hospitals' capacity to implement their underlying philosophy and CQI method.[3,9]

Difficulties to continuously maintain accreditation could be influenced by the capacity of the accreditation body and the standards required. During the study period (2012-2017), KARS is the only national accreditation body for hospitals in Indonesia with tremendous responsibilities to conduct accreditation and annual verification surveys for 2,779 hospitals scattered in 5,106 km area, a situation that requires high resources and qualified surveyors. Although the annual verification survey started in 2014 has increased the proportion of timely re-accredited hospitals, this effort at CQI has even created a higher demand for the qualified surveyors particularly those who are still actively managing hospitals.[3] Moreover, the new accreditation standards implemented since 2013 imposed a paradigm shifting[10] to a more integrated management approach and patient-centred care with strong patient and family involvement.[24] This new approach is in contrast to the hierarchical norms and paternalistic culture that are locally rooted in Indonesia as well as in other Asian countries.[25] The policy intention of the hospital accreditation program strongly influences hospital organizational motivation and behaviour.[3,26] It is argued that a strong punitive regulation would lead to administrative compliance but would be unable to maintain its continuity.[26,27] Therefore, the continuous monitoring mechanisms such as performance measurement and benchmarking should be strengthened as an incentive for improvement in addition to market and financial incentives[28,29], which remain lacking under the current accreditation system in Indonesia. Only recently did the Indonesian government, the insurance agency, and the accreditation body put more emphasis on the use of performance measures and reporting as part of the credentialing and benchmarking mechanisms.

*Implications for policy, practice and research*

With a large variation from a small district hospital to a large academic tertiary hospital and variations across provinces in Indonesia, aligning hospital licensing, certification, and accreditation is an important step-wise strategy.[21,23] Another possible option would be to apply different requirement criteria for each accreditation standard based on the hospital classification and location.[4] Furthermore, the current low proportion of public hospitals with timely reaccreditation status calls for the need to strengthen law enforcement and clear responsibilities of government, both as regulators and care providers.

Disparities within a country, such as found in Thailand[20] were also present in Indonesia. The identified capacity gap between hospitals in Java-Bali and outside Java-Bali indicated the need to harmonize the central and local governments' role under a decentralized health system. Policy and implementation studies on strategies to reduce the capacity gap should be conducted.

## Conclusion

The study identified low continuity of hospital accreditation status which is influenced by the hospital classification and provincial gap. Hospital accreditation policy should be supported with relevant policies in health financing, health human resources in a step-wise strategy to reduce capacity barriers and gaps within the country, with strong government support to promote the culture of continuous quality improvement.

## Acknowledgement

We thank the Indonesian Commission on Accreditation of Hospital who provided the access to hospital accreditation status and characteristics. This work was supported by the Directorate of Research and Community Development, General Directorate for Strengthening Research and Development Ministry of Research, Technology and Higher Education [054/SP2H/LT/DRPM/IV/2018].

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