

Original Research Article

**FROM DOCUMENT COMPLIANCE TO CLINICAL OUTCOME
ACCOUNTABILITY: HOSPITAL ACCREDITATION AND RISK ADJUSTMENT IN
INDONESIA**Andi Yussianto^{1)*}, Rosidi Roslan²⁾¹⁾Rumah Sakit Persahabatan Jakarta & Universitas Bung Karno, ²⁾Balai Besar Kekarantinaan Kesehatan (BBKK) Surabaya & Universitas Sebelas Maret Surakarta*Corresponding Author, E-mail: yussidr@gmail.com**ABSTRACT**

Introduction. Hospital accreditation is widely used to assure quality and patient safety, yet evidence on its association with clinical outcomes remains inconsistent, and the role of risk adjustment in producing fair performance comparisons is still underdeveloped, particularly in Indonesia. **Method.** This article presents a conceptual synthesis and evidence-mapping framework built on literature identified to date, guided by Joanna Briggs Institute principles and reported following PRISMA-ScR; the definitive search, screening, and full-text selection process remains underway, and the final search dates, eligibility parameters, and protocol registration have not yet been finalized. **Result & Analysis.** Mapped evidence spans multiple study designs and health systems and shows that accreditation is more consistently associated with structural and process measures than with hard clinical outcomes such as mortality and readmission, while risk-adjustment practice increasingly incorporates demographic, clinical, and social variables that can materially change hospital performance classification. **Discussion.** These patterns indicate that transforming accreditation into outcome-based accountability requires methodological change, not only conceptual reorientation, with risk adjustment serving as the mechanism linking clinical outcomes to fair institutional comparison. For Indonesia, integrating outcomes into accreditation is more realistic as a staged process, supported by stronger data quality, interoperability, and validated risk-adjustment models suited to national conditions.

Keywords: Case-Mix Adjustment, Clinical Outcomes, Hospital Accreditation, Risk Adjustment, Scoping Review

INTRODUCTION

Hospital accreditation is a principal instrument for assuring quality and patient safety, yet its design and evaluation vary across countries, with uneven weight given to structure, process, outcomes, and benchmarking (Gurisch, Kleine and Maier, 2024). A systematic review of 76 studies found accreditation consistently linked to safety culture, process performance, and length of stay, but inconsistently linked to mortality, infection, readmission, and satisfaction (Hussein *et al.*, 2021). Several accreditation systems have responded by integrating standards with performance indicators and continuous quality improvement (van Vliet *et al.*, 2023). Indonesia faces a similar need: accreditation rollout continues even though high-status hospitals do not consistently meet National Quality Indicator targets (Purwandani, Purnamawati and Putri, 2025), and incident-reporting behavior remains shaped more by organizational factors than by accreditation status itself (Permatasari *et al.*, 2023). Accreditation should therefore connect compliance, performance measurement, and outcomes, rather than function only as an external check.

The pressing question is no longer whether accreditation “works,” but which standards are assessed and which outcomes validly represent quality. Evidence from Korea found lower 30-day mortality at accredited hospitals but no benefit for readmission or length of stay, showing that this association depends on which outcome is examined (Lee, Chun and Lee, 2021). A similar pattern appeared in the Faroe Islands, where accreditation shortened length of stay without reducing readmission or mortality (Bergholt *et al.*, 2022). A

review of Joint Commission International accreditation likewise found high methodological heterogeneity and limited safety evidence (Vuohijoki *et al.*, 2025). These findings converge on a central gap: the literature still lacks consistent evidence that meeting accreditation standards translates into better clinical outcomes, a gap an umbrella review of hospital accreditation also confirms (Lewis and Hinchcliff, 2023). This is the specific gap the present study addresses.

Comparing hospital performance on outcomes requires caution, since hospitals serve populations that differ in age, diagnosis, comorbidity, and baseline risk. Incorporating present-on-admission indicators improves a risk-adjustment model's ability to separate pre-existing risk from conditions arising during hospitalization (Triche *et al.*, 2021). This is also an equity issue: adding variables such as disability, homelessness, and neighborhood marginalization can change a hospital's performance classification, particularly for readmission (Roberts *et al.*, 2025). A parallel concern appears in cancer care, where accreditation was associated with better guideline-concordant care and lower mortality among Black patients, underscoring both the equity stakes of accreditation and the need for careful adjustment (Chan *et al.*, 2024). This study adopts the Donabedian Structure-Process-Outcome framework, treating risk adjustment as the methodological link between clinical outcomes and fair performance comparison (Yang *et al.*, 2025).

Transferability is decisive when international experience informs accreditation development in Indonesia, since not every element that succeeds elsewhere can be transplanted directly

(Dharmagunawardene *et al.*, 2025). A typology of accreditation modules across hospital types shows that no single model fits all facility types and service complexities equally well, particularly once incentive structures encourage gaming, patient selection, or upcoding (Ghaffarian, Cheraghi and Ferdosi, 2024). Even policies that combine accreditation, public reporting, and inspection have not shown consistent effects across outcomes (Van Wilder *et al.*, 2021), and measurable gains depend more on how deliberately structural change is implemented than on accreditation status alone (Kanyal and Ghewade, 2025). This study therefore aims to map and synthesize evidence on the shift from compliance-based accreditation toward outcome-based accountability, with attention to risk adjustment and its implications for Indonesia, asking how this shift is documented, which outcomes are used, and how risk adjustment can produce fairer comparisons.

Hospitals with high accreditation status do not always sustain that status through consistent reporting, and Indonesia's own National Quality Indicator data illustrate the point directly (Purwandani, Purnamawati and Putri, 2025). This gap is not only administrative. Post-pandemic recovery of case-mix index and risk-adjusted mortality in United States hospitals has also followed an uneven trajectory across facility types, showing that even well-resourced systems struggle to keep outcome measurement stable once case complexity shifts (DeRienzo *et al.*, 2025). Locally developed information systems can help close this gap: a quality-management information system adopted at the point of care has been shown to meaningfully improve service delivery

once implementation moves beyond the policy stage (Sutisna *et al.*, 2024).

The framework developed here maps not only whether accreditation and outcomes are associated, but also which indicators are used and how far international experience can transfer to Indonesia. National context, including data quality, workforce, financing, and governance, can modify every link in this chain, since hospital outcomes are shaped by many forces beyond accreditation alone. The analytic sequence used in this synthesis runs from accreditation standards through organizational structure, clinical processes, and clinical outcomes, to risk adjustment, fair performance comparison, and outcome accountability. This is not a simple causal chain but three interdependent layers: accreditation as institutional intervention, outcomes as the manifestation of care, and risk adjustment as the inferential tool for fair comparison. The novelty of this article lies in integrating these layers into one evidence-mapping, policy-oriented, comparative framework, rather than treating accreditation, outcome measurement, and risk adjustment as separate literatures, an integration with direct relevance for emerging digital health standards linked to accreditation (Mehta *et al.*, 2026).

This article presents a conceptual synthesis and evidence-mapping framework built from the literature identified so far, guided by Joanna Briggs Institute principles and reported following PRISMA-ScR. The systematic search and full-text selection process is still underway, and the search dates, exclusion criteria, and PRISMA-ScR flow have not yet been finalized, a status clarified further in the Methods section. Methodological fairness is treated as inherent to accountability,

since outcome adjustment should draw on risk factors present before or at the start of care, not on complications that should remain a genuine signal of quality. Indonesia's COVID-19 experience illustrates this point: accreditation status and hospital readiness were associated with preparedness, yet patient-safety incidents still occurred across hospital types, showing that formal status cannot substitute for direct measurement of care actually received (Dhamanti *et al.*, 2022). This study therefore does not treat accreditation as a dichotomous variable equivalent to quality, but as an institutional instrument to be analyzed alongside structure, process, outcomes, and accountability mechanism

METHOD AND ANALYSIS

This study uses a scoping review design informed by a Population-Concept-Context (PCC) framework, combined with an evidence-mapping, policy-oriented, and comparative approach. A scoping design was chosen because the research question is broad and multidimensional, and because study designs, health-system contexts, and outcome measures vary widely across the relevant literature (Pollock *et al.*, 2021). The design follows the methodological principles of the Joanna Briggs Institute (JBI) and is reported in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR). Even at the evidence-mapping stage, an explicit and traceable procedure remains necessary, since transparency in question formulation, search strategy, and reporting is what allows a scoping review to be evaluated and reproduced (Hadie, 2024)

The PCC framework defines the boundaries of this synthesis. Population covers hospitals, patients receiving hospital care, hospital-service organizations, accrediting bodies, and hospital performance-measurement systems. Concept covers hospital accreditation, standard compliance, clinical outcomes, outcome-based accreditation, performance measurement, risk adjustment, case-mix adjustment, risk-standardized outcomes, quality of care, patient safety, and hospital accountability. Context covers hospital systems and accreditation arrangements in both high-income and low- and middle-income countries, with particular attention to relevance for Indonesia.

This article reports the methodological framework guiding an

evidence-mapping synthesis that is still in progress, not a completed scoping review. Consistent with the framing set out in the Introduction, the search dates, the full set of categorical exclusion parameters, review-management software, and protocol registration will be finalized and reported once the definitive search and screening stage is complete. This status is stated once here for clarity, rather than repeated at each methodological step below. Explicit protocol design nonetheless remains an important reference point at this stage, since specifying eligibility, search strategy, and reporting intentions in advance strengthens reproducibility once the review is finalized.

Evidence for this synthesis is secondary in nature and drawn from scientific publications, grey literature, and policy documents. Academic literature will be searched in PubMed/MEDLINE, Scopus, Web of Science, Embase, CINAHL, and ProQuest, with Google Scholar used to support backward and forward citation tracking. Policy and grey literature will be drawn from the World Health Organization, the Organisation for Economic Co-operation and Development, the Centers for Medicare & Medicaid Services, the Agency for Healthcare Research and Quality, national health regulators and accrediting bodies, and Indonesia's Ministry of Health and its affiliated directorates. Grey literature is included because accreditation and quality-governance evidence is documented not only in journals but also in standards, regulatory reports, and technical guidance. The search strategy is organized around four domains: accreditation (hospital accreditation, healthcare accreditation, or accreditation standards), outcomes "clinical outcome, patient outcome, mortality, readmission, complication, or patient

safety), risk adjustment (risk adjustment, risk-adjusted, case-mix adjustment or severity adjustment), and performance (performance measurement, quality indicator or outcome-based quality). These terms will be adapted to each database's syntax and subject headings, and any iterative refinement will be documented to preserve transparency.

Study selection will proceed from identification through deduplication, title and abstract screening, full-text screening, and final inclusion, with counts and exclusion reasons recorded and visualized in a PRISMA-ScR flow diagram once the search is complete. Screening is designed to be conducted independently by at least two reviewers, with disagreements resolved through discussion and a third reviewer consulted if consensus is not reached. Sources are eligible if they address hospitals, hospital patients, hospital organizations, accrediting bodies, or performance-measurement systems; examine at least one core concept from the list above; and provide information relevant to the relationship between accreditation and process or outcome measures, outcome indicators, data sources, risk-adjustment technique, indicator validity, implementation barriers and facilitators, unintended consequences, or policy implications. Both primary and secondary evidence across designs will be considered, since a scoping review is intended to characterize a heterogeneous evidence base rather than restrict inclusion to one methodological hierarchy.

Data charting will use a standardized extraction form capturing authorship, year, country, study design, hospital characteristics, accreditation system and level, structural and process elements, outcome indicators, data sources,

measurement period, patient population, risk-adjustment model and variables, statistical method, the direction of the accreditation-outcome relationship, facilitators and barriers, unintended consequences, and policy implications. For studies applying risk adjustment specifically, charting will also record model predictors, the timing of predictor measurement, and any reported information on calibration, discrimination, or transparency. Temporal distinction receives particular attention during extraction, since whether a variable represents a patient's condition before or at the start of care, rather than one that developed during treatment, has direct bearing on how a risk-adjustment model should be interpreted (Hadie, 2024). The unit of analysis is each eligible document, not individual patients or clinicians.

Findings will be synthesized narratively rather than pooled statistically, since the anticipated heterogeneity in accreditation systems, patient populations, outcome definitions, and risk-adjustment approaches makes a single quantitative estimate inappropriate. Analysis will combine descriptive numerical summary, evidence mapping, thematic analysis, comparative mapping, and policy mapping. Descriptive analysis will characterize the distribution of publications by year, country, study design, accreditation type, outcome category, and risk-adjustment approach. Thematic coding will proceed both deductively, from the conceptual framework set out in the Introduction, and inductively, where relevant themes emerge consistently across eligible sources. International findings will be interpreted through contextual translation, assessing relevance, transferability, adaptation needs, and short-, medium-, and long-term

applicability for Indonesia. All results will finally be organized into a matrix crossing Accreditation, Clinical Outcome, Risk Adjustment, Health System, and Policy Implication, allowing the dimension of accreditation analyzed, the outcome used, the presence and character of risk adjustment, and the resulting interpretive and policy consequences to be distinguished across sources.

RESULTS

Consistent with the Methods section, the sources presented below were identified through the evidence-mapping search conducted to date, not through a completed and finalized PRISMA-ScR screening process. They are treated here as an illustrative, developing picture of the literature's direction, not as the definitive output of the full systematic search described in the protocol. The PRISMA-ScR flow diagram, with exact counts for records identified, duplicates removed, and studies excluded at each stage, will be reported once that process is complete.

Within this scope, the identified evidence spans a wide range of designs and settings, including umbrella reviews, systematic reviews, scoping reviews, retrospective cohorts, before-after studies, national cross-sectional analyses, policy evaluations, and risk-adjustment modeling. Geographically, the mapped literature originates from the United States, Canada, several European countries, China, a number of low- and middle-income countries, and Indonesia. An umbrella review covering 33 studies on hospital accreditation found that effectiveness, efficiency, safety, and patient-centeredness are evaluated far more often than access, equity, or timeliness, alongside high

heterogeneity among primary studies (Lewis and Hinchcliff, 2023). A separate mapping of accreditation modules by hospital type found recurring standard elements, including management responsibility, patient care, medication management, patient safety, and infection control, although the specific module structure still varies with hospital size and function (Ghaffarian, Cheraghi and Ferdosi, 2024).

The relationship between accreditation status and mortality, readmission, and length of stay is not consistent across studies. A before-after study across hospitals in the Faroe Islands found average length of stay fell from 13.4 days (95% CI 10.8-15.9) to 7.5 days (95% CI 6.10-8.89) after first accreditation, with an adjusted hazard ratio for discharge of 1.23 (95% CI 1.04-1.46). Over the same period, 30-day acute readmission moved from 12.3% to 9.5% and 30-day mortality fell from 3.3% to 2.8%, but neither change remained associated with accreditation after adjustment (Bergholt *et al.*, 2022). A different pattern appeared in China's Chest Pain Center accreditation program, analyzed across 40,848 acute aortic dissection patients in 1,671 hospitals. In-hospital mortality fell from 16.3% before accreditation to 12.1% after, and the post-accreditation period was independently associated with lower mortality (adjusted OR 0.644; 95% CI 0.599-0.693) and higher odds of guideline-appropriate Stanford type A surgery (adjusted OR 1.973; 95% CI 1.797-2.165) (Liu *et al.*, 2025). In a US oncology cohort of 17,249 non-Hispanic Black patients with colon cancer, treatment at a Commission on Cancer-accredited hospital was associated with higher odds of guideline-concordant lymphadenectomy (adjusted OR 1.89; 95% CI 1.69-2.11) and

chemotherapy (adjusted OR 2.31; 95% CI 1.97-2.72), and with lower cancer-specific mortality in some disease subgroups (Chan *et al.*, 2024). Accreditation's benefit for clinical outcomes does not, therefore, follow a uniform pattern; it depends heavily on the program, population, and indicator examined.

Similar variation appears in patient-safety indicators and process measures across accreditation forms. A systematic review of Joint Commission International accreditation searched CINAHL, ProQuest, PsycINFO, PubMed, and Scopus, and included 14 studies after excluding two for low methodological quality. Heterogeneity across studies precluded meta-analysis, and direct evidence on patient safety and occupational health was described as still limited (Vuohijoki *et al.*, 2025). A different pattern emerged from a before-after evaluation of NABH accreditation, which reported a 40% rise in infection-control compliance, a 20% reduction in discharge delays, a 15% gain in documentation accuracy, and a 25% rise in patient-satisfaction scores linked to structured policy (Kanyal and Ghewade, 2025).

Differences in economic context and health-system design do not produce one universal pattern of accreditation effectiveness. A narrative systematic review of 13 studies spanning high-income and low- and middle-income countries found improvements in patient safety, organizational performance, and service quality in a number of studies, but the size of benefit varied too widely, and outcome definitions differed too much, for quantitative synthesis; effects in high-income countries tended to appear larger than those in low- and middle-income settings (Bhoomadevi *et al.*, 2026). A comparable picture emerged from an

evaluation of Flanders' combined accreditation, public-reporting, and inspection policy. Of 69 mapped studies, 40 addressed accreditations, 24 addressed public reporting, and three addressed inspection. Most evidence was rated low quality, neutral effects dominated for patient outcomes, and positive effects appeared more often for process-measure compliance (Van Wilder *et al.*, 2021). Variation in accreditation's impact reflects, then, not only outcome type but also health-system character and quality-policy structure.

Mapping of risk-adjustment and case-mix-adjustment practice shows that outcome comparisons across providers increasingly draw on combined demographic, clinical, social, and service-characteristic variables. In a study of 544,805 admissions across 28 Ontario hospitals, adding disability, homelessness, and neighborhood marginalization to a conventional clinical risk-adjustment model produced only small changes in discrimination and calibration, yet it reclassified five hospitals' performance on risk-standardized 30-day readmission (Roberts *et al.*, 2025). A US multisite study spanning 715 hospitals and roughly 7.8 million admissions between the fourth quarter of 2019 and the first quarter of 2024 found mean case-mix index rose from 1.70 to 1.79, while standardized mortality ratio fell from 1.00 to 0.80, with a joinpoint trend change identified in the third quarter of 2021 (DeRienzo *et al.*, 2025). This pattern shows that patient risk composition, and how it is adjusted for, can materially change the interpretation of hospital performance.

The use of risk-standardized outcomes in national-scale quality assessment becomes especially visible when outcomes are compared across highly

variable clinical-risk populations. Among Medicare beneficiaries hospitalized for COVID-19, risk-standardized in-hospital mortality was calculated for 4,256 hospitals and ranged from 4.5% to 59.9%, with a median of 18.2%. Pre-pandemic hospital quality scores correlated negatively with standardized mortality during the pandemic, at -0.41 for in-hospital mortality. Compared with five-star hospitals, patients at one-star hospitals had an odds ratio of 1.87 (95% CI 1.83-1.91) for in-hospital mortality (Peter *et al.*, 2024).

Performance measurement methodology is moving away from raw outcome comparison toward analytic approaches that account for risk variation and data structure, including multivariate regression, hierarchical models, standardized mortality ratios, DRG-based grouping, and case-mix index. An interrupted time-series evaluation of DRG policy in Chongqing found case-mix index rose immediately by 0.0661 after implementation ($p = 0.02$), then declined by 0.0071 per period thereafter ($p < 0.001$). Readmission rate rose immediately by 0.5653 percentage points ($p = 0.008$), with no significant longer-term trend, alongside a shift in service composition toward higher-volume, lower-complexity cases (Liu *et al.*, 2025).

The availability of national quality data is a notable feature of the Indonesian literature. An evaluation of the National Quality Indicator policy found that by December 2023, 2,884 hospitals, or 95.6% of hospitals in the dataset, were accredited, while average reporting compliance for the National Quality Indicator during 2023 stood at 69%. Among six hospitals examined across western, central, and eastern Indonesia, only one reported indicators consistently; the others met

targets on five to eight indicators (Purwandani, Purnamawati and Putri, 2025). This gap between accreditation status and reporting consistency is the empirical anchor for the staged, capacity-aware approach to outcome-based accreditation discussed next.

DISCUSSION

No single risk-adjustment model fits every outcome, population, or hospital, and this follows logically from how differently mortality, readmission, procedural complications, and patient experience actually form. Each outcome needs its own population definition, measurement window, data source, and covariate set. Risk adjustment must also be kept distinct from erasing inequality outright. Certain social factors may need inclusion so that comparisons across institutions are fairer, but adjusting too broadly can hide disparities that policy should keep visible rather than average away. A policy review of the Hospital Readmissions Reduction Program illustrates the stakes: adding social risk factors, or comparing hospitals within more socially similar peer groups, narrowed the penalty gap between safety-net hospitals and others, though the adjusted measures still had to preserve real sensitivity to genuine quality variation (Rogstad *et al.*, 2022). Evidence from Ontario reinforces the same point. Adding disability, homelessness, and neighborhood marginalization changed a model's discrimination and calibration only modestly, yet it still reclassified hospitals' relative standing on 30-day readmission (Roberts *et al.*, 2025). Risk adjustment, in short, is what allows care quality to be separated, as far as possible, from the case mix hospitals happen to serve.

This has a direct practical consequence for how outcome-based accreditation should be designed. It cannot rest on a simple accredited-versus-not-accredited label. It needs to account for the degree of standard fulfillment, implementation maturity, process performance, risk-standardized outcomes, and an organization's actual capacity to respond when results fall short. This framing helps explain, rather than contradict, a pattern that recurs across the evidence mapped here: accreditation's association with structural and process measures is far more consistent than its association with hard clinical outcomes. The Faroe Islands cohort shows exactly this shape. Length of stay fell after first accreditation, but the readmission and mortality benefit did not survive adjustment (Bergholt *et al.*, 2022), while China's Chest Pain Center program, a narrower and more clinically specific accreditation model, did show adjusted mortality and diagnostic-accuracy gains (Liu *et al.*, 2025). A cross-income-group systematic review similarly found that accreditation's association with safety and quality holds in a number of settings, but its magnitude is uneven and strongly shaped by resource availability and system support (Bhoomadevi *et al.*, 2026). Program sustainability in low- and middle-income countries depends further on government role, standard design, resource availability, and monitoring systems, with limited resources emerging as a recurring barrier (Dharmagunawardene *et al.*, 2025). A four-country comparative study spanning Australia, Botswana, Denmark, and Jordan likewise found differences in program goals, voluntary versus mandatory status, and implementation support, with leadership and ownership recurring as facilitators and limited quality literacy

recurring as barriers (van Vliet *et al.*, 2023). Read together, this body of evidence is more coherent when implementation context is treated as a central analytic variable rather than as background noise.

At a higher level of maturity, outcomes that have been validated and risk-standardized can begin to sit alongside structure, process, and patient safety as one input into accreditation decisions. Before that stage, indicators with a relatively well-established population definition and risk model are more proportionate to use first for internal benchmarking and organizational learning, ahead of public comparison. This staged approach matters because the digital transformation that outcome-based accreditation depends on requires far more than converting paper forms to electronic ones; it also requires data governance, interoperability, and adequate clinical-information integration (Mehta *et al.*, 2026). Indonesia already has the foundation for this, including a national accreditation system and the National Quality Indicator framework, but that infrastructure does not by itself guarantee uniform data quality. An evaluation of six hospitals across western, central, and eastern Indonesia found that although 95.6% of hospitals in scope were accredited by the end of 2023, average National Quality Indicator reporting compliance that year was only 69%, and only one of the six hospitals reported consistently; implementation depended on leadership commitment, the presence of a quality team, training, and monitoring and evaluation (Purwandani, Purnamawati and Putri, 2025). A locally developed quality-management information system offers one practical route to closing this gap once adopted at the point of care, rather than left at the policy stage (Sutisna *et al.*, 2024).

Integrating outcomes into Indonesia's accreditation system therefore makes more sense as a staged process, one that avoids comparing national referral hospitals, resource-limited regional hospitals, and facilities serving high-risk social populations through one identical model without the capacity to represent their differing case complexity.

The purpose of risk adjustment is not to make every institution look equally capable. It is to increase the likelihood that whatever variation remains after adjustment genuinely reflects care quality. Low-volume hospitals deserve particular caution here, since outcome estimates in small populations can be highly unstable; performance classification under these conditions should weigh uncertainty intervals rather than rely on point estimates or rankings alone. Methodological transparency is an equally important precondition: hospitals need to know who is counted in the denominator, which outcome period is used, which covariates enter the model, and how statistical uncertainty is handled. This caution matters more once indicators become tied to status, reputation, or financial incentives, because providers can respond not only by improving care but also by changing documentation and patient mix, as seen in DRG-based payment settings where case-mix shifts followed incentive changes (Liu *et al.*, 2025). For accreditation, this means risk avoidance, gaming, and upcoding cannot be addressed through statistical sophistication alone. Indicator governance also needs data audits, definitional stability, traceable variable sources, and a clear boundary between using data for quality learning and using it to trigger regulatory consequences.

These findings should be read in proportion to the current stage of this

synthesis. Several methodological parameters remain unfinalized, including the inclusion year range, language restrictions, treatment of conference abstracts and theses, and protocol registration status, and these need to be settled before the review can be positioned as a completed report. As noted in the Results section, the definitive search and selection process across all planned databases has not yet produced final PRISMA-ScR counts, so claims about the completeness of evidence coverage remain provisional. Much of the accreditation evidence is observational, cross-sectional, or before-after in design, so associations between accreditation status and outcome cannot always be read as causal; hospitals capable of achieving accreditation may already have differed from others in leadership, resources, or quality culture before accreditation was ever pursued. Variation in accreditation definitions, patient populations, outcome types, and risk-adjustment approaches limits direct comparison of effect sizes, which is also why meta-analysis was not set as this study's objective. Transparency about these constraints is treated here as part of maintaining the traceability and validity of the interpretation offered.

Accreditation can still be steered toward more clinically relevant accountability without losing its foundational role in standardization and continuous quality learning. To reach that point, accrediting bodies and hospitals need to treat outcomes as one component within a broader information set that also includes structure, process, patient experience, and safety, so that quality judgments never rest on a single indicator. At the policy level, a reasonable first step is piloting risk-standardized outcome indicators within

selected hospital groups and clinical conditions, paired with data-quality audits, monitoring for unintended provider behavior, and explicit attention to potential unfairness toward referral hospitals and facilities serving vulnerable populations. At the national empirical level, future research can prioritize developing and validating risk-adjustment models using Indonesian data for high-volume conditions with relatively objective outcome definitions, then testing performance across hospital class, region, and patient complexity. On the evaluation side, future work needs to move past simple accredited-versus-not-accredited comparisons toward longitudinal or quasi-experimental designs capable of tracking outcome change before, during, and after standard implementation. The research agenda that follows from this synthesis should therefore aim not only to demonstrate that an accreditation-outcome relationship exists, but to ensure that whatever outcome measure is used is valid, fair, actionable, and matched to the actual capacity of Indonesia's health system.

CONCLUSION

If patient outcomes are to be used for comparing hospital performance, risk adjustment or case-mix adjustment is a basic methodological requirement. Without it, differences in patients' baseline risk can be mistaken for differences in care quality. Clinical outcomes are not determined by accreditation status alone. They emerge from a complex interaction between how thoroughly standards are implemented, the quality of clinical process, institutional capacity, patient characteristics, and the broader health system in which a hospital operates. Accreditation is therefore best understood as an institutional mechanism

that builds the organizational foundation and process conditions for quality, not as a single marker that automatically certifies clinical success. The evidence mapped in this study shows that accreditation's relationship with mortality, readmission, complications, patient safety, patient experience, and other indicators varies by accreditation type, population, indicator choice, study design, and health-system context. This variation indicates that shifting hospital accreditation from a model centered on structural, process, and documentation compliance toward clinical-outcome accountability requires more than a conceptual reorientation. It requires methodological change as well.

For Indonesia's health system, this framework offers a basis for bringing hospital accreditation, the National Quality Indicator system, clinical information, quality governance, and analytic capacity together into an evaluation approach that is more outcome-oriented, without losing sight of how much hospitals and patient populations differ. Risk adjustment should not be treated as a statistical add-on applied after outcomes are measured. It is a foundational mechanism that helps determine whether hospital performance accountability is valid and fair. An outcome-oriented approach is not meant to replace judgment of structure and process, but to extend it with empirical evidence of the care patients actually receive and experience. This relationship can be expressed as a sequence: accreditation standards, organizational structure and capacity, clinical process implementation, clinical outcomes, risk adjustment or case-mix adjustment, fair performance comparison, outcome accountability, and continuous quality improvement. The

central conceptual contribution of this article lies in integrating accreditation, clinical outcomes, and risk adjustment into one connected framework, so that quality assessment does not stop at standard compliance but also accounts for the validity and fairness of how service outcomes are interpreted.

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