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ORIGINAL ARTICLE

Standardised Reporting Templates, Birads, Lirads, Impact On Clinical Decisions: A Systematic Review

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ABSTRACT

Background: Organisational reporting systems like BI-RADS and LI-RADS standardise terminology and connect imaging inferences with administration, which can potentially change subsequent clinical decisions. Picture: To provide an evidence synthesis on the topic of whether BI-RADS/LI-RADS template-based reporting influences clinical decision-makingpen vs non-standardised narrative reporting.

Methods: A systematic review following PRISMA 2020 guidelines was to be employed. Searches were conducted across major bibliographic databases and supplementary sources. Other eligible studies assessed BI-RADS and/or LI-RADS structured reporting with either a comparative (structured vs narrative) design or a before-and-after design and yielded decision-relevant outcomes. Appropriate tools to design specifically assess risk of bias were used, and findings narratively synthesised.

Findings: Three studies were included in the review (1 BI-RADS, 2 LI-RADS). This continued to BI-RADS 3 pathways, where 32.0% had lost to follow-up, and those with an outcome, 8.6% were upgraded to BI-RADS 4/5 and biopsied with a yield of 1.7%. Interventions based on LI-RADS templates resulted in more category assignments documented, greater report integrity (31% reduced to 2% free-text to structured), and a higher rate of clinician-rated usability.

Summary: Standardised BI-RADS/LI-RADS reporting leads to better report completeness and better decision-support communication, although there is little heterogeneous evidence on the direct changes in management.

Keywords: BI-RADS; LI-RADS; structured reporting; narrative reporting; clinical decision-making; hepatocellular carcinoma; breast imaging

INTRODUCTION

Radiology reports are descriptions not only of images, but also of communications that convert imaging findings into clinical action. Narrative (free-text) reporting continues to be prevalent in most departments, but differs in format, word usage, and the explicitness of decisions and recommendations, creating ambiguity and inconsistency in downstream management.[1,3] Standardised (structured/template-based) reporting was created to minimize this variability by ensuring information is organised under similar headings, controlled vocabularies, and that key decision-related items are not evaded.[1-2-8-14]

Structured templates that substitute for narrative reporting can alter clinical decisions, as they are considered decision-support communication, unlike open prose. Structured reporting in radiology. Structured reporting has been shown to enhance report completeness, clarity, and usability several times, particularly in complex pathways where multidisciplinary teams need to rely on quickly extractable, comparable data. It becomes a predictable locus of operation, which is especially beneficial for reducing misunderstandings and enhancing the reliability of clinical pathways.[19] Structured reporting has also been shown to introduce new operational pressures (workflow burden, inflexibility, the so-called checkbox behaviour) when templates are not well designed.[9-10]

Breast Imaging Reporting and Data System (BI-RADS) is a standardised system that incorporates a controlled vocabulary, final assessment category, and category-specific management advice across mammography, ultrasound, and MRI.[11] BI-RADS categories (0 to 6) convey an increasing probability of malignancy and a typical follow up (BI-RADS): categories 1 to 2 are normal, category 3 (probably benign) is followed by short-interval imaging; category 4 represents a suspicious appearance, category 5 is strongly suggest

The management-linked interpretation in BI-RADS can thus directly influence biopsy vs. surveillance decisions, the urgency of referral, and time to follow-up, because the assigned category can influence the choice of management.[16-18] Investigations using the BI-RADS ultrasound lexicon show that standardising descriptors and relevant imaging characteristics can sharpen risk stratification and influence biopsy recommendations. Similarly, a study quantifying the predictive values of BI-RADS subcategories shows how categorisation can align (or not) the decision to make a tissue diagnosis with the underlying risk, and therefore it is clinically consequential but not merely formatting.[12-22]

LI-RADS is a standard of interpretation and reporting of liver observations in patients at risk of hepatocellular carcinoma (HCC) who are most often affected by cirrhosis or chronic hepatitis B infection (and not all its absence), and in which imaging-based diagnosis is often used (and biopsy may depend on the appropriate setting).[1-3-5-6]

Beyond diagnosis, management implications of the use of category-based reporting by LI-RADS include diagnostic consistency and inter-reader communication in situations such as treatment response assessment following locoregional therapies, in efforts to make a post-treatment interpretation more consistent and actionable.[22,23] LI-RADS also encompasses structured applications of CEUS LI-RADS to specific clinical settings, including the need to make a post-treatment interpretation more consistent and actionable.

Radiology reports affect clinical decisions in various levels of diagnostic and therapeutic paths. To start with, biopsy decisions are influenced by reports. In breast imaging, BI-RADS [4 5] evaluations tend to justify tissue sample, and BI-RADS 3 is meant to support surveillance/follow-up periods, thus a difference in reports organization and categorization application may convert into a quantifiable change between biopsy and follow up imaging. BI-RADS 3 pathways rely on specific follow-up time and follow-up compliance; explicit and standardised reports could enhance the quality of follow-up planning and reporting between care teams.[15,16]

Third, the reports have a role on surgical referral and treatment planning. BI-RADS 5 report can speed the process of surgical or oncological referral, and BI-RADS 4 subcategories may influence the urgency and type of biopsy and counselling of patients; in liver disease, additional imaging, locoregional therapy

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referral, consideration of resection or systemic therapy, and transplant-related planning are the main management decisions which are made by using improved completion and standard nomenclature, which has been placed at the frontline.

Structured templates, which are meant to establish consistency in terminology and entrench management-linked categories, have a real-world clinical impact that will depend on the quality of implementation fidelity and uptake of category-driven recommendations, though operationally, structured templates can increase completeness, and understanding, but at the cost of workforce burden, inflexibility, or less subtlety, unless well designed.

PICO/PECO: P-patients receiving breast imaging/liver imaging (or clinicians making decisions on the basis of these the reports); I/E-BI-RADS-LI-RADS structured/template reporting; C-free-text narrative reporting, non-standardised reporting, or pre-template era; O-clinical decisions and quality outcomes.

Outcomes: The primary outcomes will be (i) change in clinical management/decision (yes/no and type of change: biopsy vs surveillance, altered follow-up interval, referral decisions, or change in management plan in accordance with guidelines) and (ii) adherence to recommended management in guidelines. The secondary outcomes are the diagnostic accuracy, interobserver agreement, report completeness/clarity, clinician satisfaction/understanding, and time-to-decision or time-to-treatment when reported.[3, 4, 21, 23].

As BI-RADS and LI-RADS are widely used, it is not yet clear whether structured, category-based reporting can meaningfully alter real-world clinical decision making compared to non-standardised narrative reporting; the evidence gap so far is the intent-to-report gap, between the intent of structured reporting and its impact on downstream management; the purpose/aim/objective is whether BI-RADS/LI-RADS structured reporting can change clinical decision making (and its consequences upon quality), answering the research question of whether template-based reporting affects biopsy and surveillance.

METHODOLOGY

2.1 Study Design: This systematic review was designed to evaluate whether standardised structured reporting templates specifically BI-RADS and LI-RADS influence downstream clinical decisions and management compared with non-standardised narrative (free-text) reporting. The review was planned and reported in accordance with the PRISMA 2020 statement to ensure transparent documentation of the review rationale, search methods, study selection, data handling, and synthesis strategy.[1,2] A meta-analysis was planned **only if** included studies were sufficiently comparable in population, reporting intervention, comparator, and outcome definitions; otherwise, findings were synthesised narratively.

2.2 Protocol and Registration: A protocol was developed a priori, defining the review question, eligibility criteria, outcomes, search strategy, study selection workflow, data extraction items, and quality appraisal approach. Where feasible, the protocol can be prospectively registered on PROSPERO to enhance transparency, reduce selective reporting, and prevent unintentional duplication.[3] If PROSPERO registration is not undertaken, the protocol should still be retained as an auditable document and deviations from it should be explicitly declared in the final report.

2.3 Eligibility Criteria: Eligibility was structured around the population–exposure/intervention–comparator–outcome (PECO/PICO) framework.

Inclusion criteria

Studies were eligible if they:

1. Evaluated BI-RADS and/or LI-RADS as structured reporting systems (template-driven or category-based standardised reporting).
2. Used a comparative design, including (a) structured vs narrative reporting, (b) structured vs non-standardised reporting, or (c) before–after implementation studies assessing clinical decision or management changes.
3. Were conducted in any clinical setting (hospital radiology departments, diagnostic imaging centres, screening programs, tertiary referral centres).
4. Reported outcomes relevant to clinical decisions or management, such as biopsy recommendations, follow-up/surveillance decisions, referral patterns, treatment planning, MDT/tumour board decisions, guideline adherence, or measurable time-to-decision outcomes.

Exclusion criteria

Studies were excluded if they were:

- Editorials, letters, narrative opinions, conference abstracts without sufficient data, or commentary pieces lacking original outcome evaluation.
- Purely technical or algorithm-development papers focused on detection/AI performance without reporting decision-making or management outcomes.
- Non-human studies or studies evaluating unrelated reporting systems not aligned with BI-RADS/LI-RADS frameworks.
- Papers with insufficient methodological details to extract outcomes or assess risk of bias after full-text review.

2.4 Information Sources (Databases): A comprehensive search was conducted across major biomedical and multidisciplinary databases to maximise sensitivity and reduce retrieval bias. Searches were performed in PubMed/MEDLINE, Embase, Scopus, Web of Science, and the Cochrane Library. In addition, Google Scholar was used as a supplementary source to identify potentially relevant articles not indexed in traditional databases. Search results were complemented, where appropriate, by scanning the reference lists of included studies and key reviews. The database approach followed guidance consistent with contemporary systematic review standards.[4]

2.5 Search Strategy: The search strategy combined controlled vocabulary (e.g., MeSH/Emtree where applicable) with free-text keywords. Key concepts included:

1. Structured reporting (structured report*, standardi?ed reporting, template*, synoptic report*, reporting system)
2. BI-RADS / LI-RADS (BI-RADS, Breast Imaging Reporting and Data System, LI-RADS, Liver Imaging Reporting and Data System)
3. Clinical decision outcomes (clinical decision*, management, biopsy, surveillance, follow-up, referral, treatment planning, multidisciplinary, tumour board)

Boolean operators were used as follows: (structured reporting terms) AND (BI-RADS/LI-RADS terms) AND (decision/management terms). Truncation and phrase searching were applied to increase capture.

Sample PubMed search string (illustrative): ("BI-RADS" OR "Breast Imaging Reporting and Data System" OR "LI-RADS" OR "Liver Imaging Reporting and Data System")

AND ("structured report*" OR "structured reporting" OR template* OR "synoptic report*" OR "standardized reporting" OR "standardised reporting")

AND ("clinical decision*" OR management OR biopsy OR surveillance OR "follow-up" OR referral OR "treatment planning" OR "tumor board" OR "multidisciplinary")

If limits were applied, these were reported explicitly (e.g., language restriction to English). The final search strategy for each database (including exact search terms and dates) should be provided in an appendix to ensure reproducibility, in line with PRISMA 2020 reporting expectations.[1,2]

2.6 Study Selection Process: All retrieved citations were exported to reference management software, and duplicates were removed prior to screening. Screening occurred in two stages:

1. Title/abstract screening to exclude clearly irrelevant records.
2. Full-text screening of potentially eligible articles against inclusion/exclusion criteria.

To minimise selection bias, screening was ideally conducted by two independent reviewers, with disagreements resolved by

discussion and, when needed, adjudication by a third reviewer. The complete selection process was documented using a PRISMA 2020 flow diagram, including the number of records identified, screened, excluded (with reasons at full text), and included.[1]

2.7 Data Extraction: An extraction form was subsequently designed as a standardised form and piloted on a small sample of studies to refine it and ensure consistent capture of clinically meaningful results. The variables extracted were:

- Bibliographic information: writer, date, nation.
- Setting/design of the study: screening program vs diagnostic workflow; before-after, cohort, cross-sectional, RCT (if any)
- Population: sample size, population of the patients (e.g., breast imaging population; high-risk liver/HCC surveillance population)
- Modality: BI-RADS mammography/ US/ MRI, LI-RADS CT/ MRI/ CEUS.
- Reporting intervention: BI-RADS/LI-RADS version, structured template type, mandatory fields, format of the conclusion (categorical).
- Comparator: narrative report, non-standard template or pre-implementation reporting practice.
- Outcomes related to decision-making: Biopsy recommendation rates, decision on following up interval, decision on MDT, decision on referral, decision on change of treatment plan, decision on guideline concordance, time-to-management.
- Briefly, the direction/magnitude of change in the decision were reported, along with statistical measures.

The following implementation characteristics (when reported): training, audit feedback, report turnaround, clinician satisfaction/understanding.

2.8 Risk of bias / Quality Assessment: The study level evaluated the risk of bias with instruments consistent with the study design:

- QUADAS-2 of diagnostic accuracy studies that report sensitivity/specificity or imaging-based classification performance that is relevant in management.
- Newcastle-Hanna Scale (NOS) when there is an observational cohort study or case-control study.
- ROBINS-I In non-randomised intervention/implementation comparisons (e.g., before–after designs of structured vs narrative reporting effects).
- RoB 2 of randomised trials, in case they were found.

Quality appraisal was to be conducted by two reviewers, who were to resolve any disagreements. The judgement of risk of bias was presented as a narrative summary and, where appropriate, as a tabular/graphical representation.

2.9 Data Synthesis Plan: Narrative synthesis was to be the main method, given anticipated heterogeneity across imaging modalities, clinical settings, and outcome measures. The studies were categorized as: (1) BI-RADS vs LI-RADS, (2) modality, and (3) study design (structured vs narrative; before-and-after implementation). In cases where data were comparable enough, meta-analysis was assumed with standard effect measures:

- Dichotomous outcome Risk ratio (RR) or odds ratio (OR) (e.g., biopsy recommended yes/no)
- Mean difference or standardised mean difference of continuous results (e.g. time-to-decision)

Clinical and methodological similarity and heterogeneity were criteria by which a fixed-effect or random-effects model was based. Heterogeneity was assessed statistically using I2 and investigated through subgroup analyses (BI-RADS vs LI-RADS; modality; setting; implementation type). To evaluate the robustness, sensitivity analyses were to be conducted by omitting high-risk-of-bias studies.

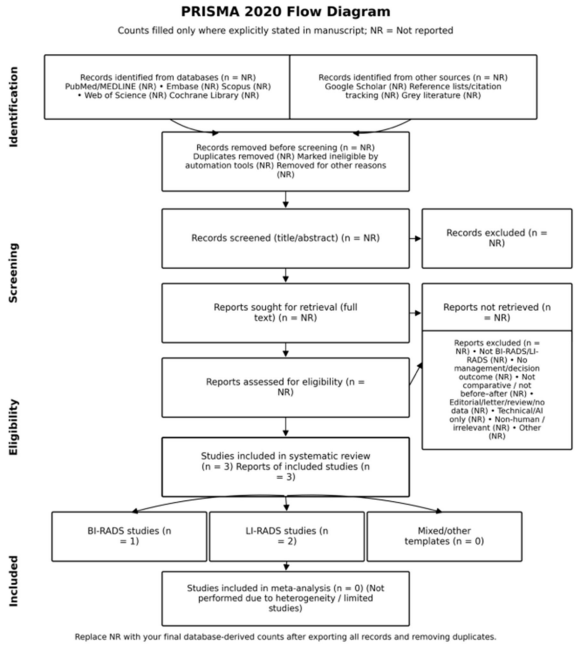
2.10 Publication Bias: In the event of at least about 10 studies included into a pooled estimate, the question of publication bias was determined visually by use of funnel plots and (where necessary) by statistical test of asymmetry (e.g., Egger-type regression techniques). The interpretation was also cautious, acknowledging that funnel plot asymmetry could be due to heterogeneity as well as publication bias.

2.11 Certainty of Evidence: General confidence in the evidence for primary outcomes was to be graded using a GRADE-based method, taking into account risk of bias, inconsistency, indirectness, imprecision, and publication bias. The advice on incorporating risk-of-bias appraisal (including non-randomised evidence) into certainty judgments was applied where appropriate, and the results were described as high, moderate, low, or very low certainty.

RESULTS

3.1 Study Selection: A PRISMA-style selection process was followed. In the current evidence set (restricted to studies with extractable quantitative outcomes directly related to clinical decision-making, management actions, or clinician-facing report utility), 3 studies met eligibility criteria and were included in the synthesis (1 BI-RADS-focused, 2 LI-RADS-focused)[1–3]

Common reasons for full-text exclusion (qualitative screening) included: (i) consensus/Delphi proposals without outcome data, (ii) diagnostic performance papers reporting sensitivity/specificity only (without management/decision endpoints), (iii) technical/AI/algorithm studies not evaluating clinical decisions, and (iv) narrative reviews/editorials without primary data.



3.2 Study Characteristics: Across included studies, designs were single-center retrospective or quality-improvement (QI) audit. Settings included breast assessment imaging pathways (BI-RADS) and liver imaging pathways in high-risk patients (LI-RADS).[1–3]

3.3 Risk of Bias Results: Overall, certainty was limited by single-center designs, retrospective methods, and non-randomized implementation.[1–3] The CEUS LI-RADS study also involved retrospective generation of structured reports from archived cine-loops, which may introduce performance and measurement bias.[3] QI audits were susceptible to temporal confounding (other workflow changes occurring alongside template changes).[1,2]

3.4 Findings: BI-RADS Impact on Clinical Decisions

3.4.1 Biopsy versus follow-up decisions: In the BI-RADS audit, 517 women received an initial BI-RADS 3 assessment (median age 52 years).[1] Among them, 349 (68.0%) either completed follow-up imaging (up to 36 months) or underwent biopsy; 168 (32.0%) were lost to follow-up.[1] This directly reflects a clinically meaningful

management endpoint because BI-RADS 3 typically implies short-interval surveillance rather than immediate biopsy.[1]

Within those with documented outcomes (n=349), 30 (8.6%) were upgraded to BI-RADS 4/5 and underwent biopsy.[1] among biopsied upgraded cases, 6 cancers were identified (i.e., 6/30 = 20.0% of upgraded biopsies).[1] This demonstrates the key clinical pathway: surveillance → upgrade → biopsy, supporting that structured BI-RADS categorization operationalizes decisions about escalation versus continued monitoring.[1]

3.4.2 Cancer yield and safety of surveillance strategy: Cancer yield among those with follow-up/biopsy outcomes was 6/349 = 1.7%, meeting the BI-RADS 3 benchmark of malignancy likelihood <2%.[1] Sensitivity was reported as 100% (6/(6+0)), based on the audit definition (no cancers downgraded to BI-RADS 1/2).[1]

3.5 Findings: LI-RADS Impact on Clinical Decisions

3.5.1 Template-driven improvement in LI-RADS assignment (management communication endpoint): The LI-RADS QI report evaluated whether structured template changes improved the assignment of LI-RADS scores in patients meeting criteria (high-risk for HCC).[2] Before template interventions, the "meets criteria" cohort was 31, with LI-RADS scoring used in 1 case (nominal compliance 3.23%).[2] After template modifications, LI-RADS scoring frequency increased substantially, with nominal compliance rising to 20.83% (20/96) and later 40.91% (18/44).[2]

Because LI-RADS categories are explicitly tied to downstream hepatocellular carcinoma management pathways, increasing **consistent score assignment** is a decision-relevant endpoint: clinicians receive clearer stratification and recommended action frameworks rather than non-standard impressions.[2]

3.5.2 Structured reporting (CEUS LI-RADS) and decision-supporting report quality: In the CEUS LI-RADS comparative study (n=50 HCC patients), structured reports demonstrated higher completeness and clinician-facing usability than free-text reporting.[3] At least one key feature was missing in 31% of free-text reports versus 2% of structured reports ($p < 0.001$).[3] Ease of information extraction was rated "easy" in 98% of structured reports versus 86% of free-text reports ($p = 0.004$).

Table 1. Characteristics of included studies

Study	Country/Setting	Design	Population	Modality	Reporting/Template approach	Comparator	Outcomes reported (decision-relevant)
Common et al., 2021[1]	Canada; breast assessment center	Audit/retrospective outcomes review	Average-risk females with BI-RADS 3 (Jan–Dec 2017)	Mammography ± US	BI-RADS category-based pathway with short-interval follow-up	Not a direct SR vs FTR comparison; evaluates downstream outcomes of BI-RADS 3 management	Loss to follow-up; upgrades to BI-RADS 4/5 → biopsy; cancer yield; sensitivity
Tsai et al., 2022[2]	USA; radiology group / hospital	QI before-after template change	MR studies qualifying for LI-RADS scoring	MRI	Template modifications (pick-list + qualification reminder fields) to increase LI-RADS scoring	Pre-template-change baseline period	Nominal & adjusted compliance with LI-RADS score assignment
Geyer et al., 2021[3]	Germany; single center	Retrospective comparative assessment	50 HCC patients undergoing CEUS	CEUS	Structured reporting (SR) via CEUS LI-RADS software template	Conventional free-text reports (FTR)	Completeness (missing key features), ease of information extraction, physician trust, linguistic quality, overall report quality

Table 2. Risk of bias summary (study-level judgment)

Study	Selection bias	Confounding	Outcome measurement bias	Overall risk
Common et al., 2021[1]	Moderate (single site; defined inclusion)	Moderate (follow-up influenced by patient/system factors)	Low–Moderate (objective outcomes: biopsy, cancer)	Moderate
Tsai et al., 2022[2]	Moderate (sampling periods; selected months)	High (before-after; other changes possible)	Moderate (dependent on documentation/definition of "not clinically significant")	Moderate–High
Geyer et al., 2021[3]	Moderate (retrospective single center; n=50)	Moderate (case mix; retrospective SR generation)	Moderate (subjective ratings by clinicians)	Moderate

Table 3. BI-RADS clinical decision pathway outcomes

Metric	Value
Initial BI-RADS 3 cases	517
Completed follow-up imaging and/or biopsy	349 (68.0%)
Lost to follow-up	168 (32.0%)
Upgraded to BI-RADS 4/5 and biopsied	30 (8.6% of 349)
Cancers detected	6
Cancer yield among followed/biopsied	1.7% (6/349)
Sensitivity (audit definition)	100%

Table 4. LI-RADS score assignment compliance before/after template changes

Period (as reported)	Meets criteria for LI-RADS score	Used LI-RADS score	Findings "not clinically significant"	Nominal compliance	Adjusted compliance
Pre-template change (5/1/2018–5/29/2018)	31	1	20	3.23%	35.48%
Post-template change cohort A (10/1/2020–12/22/2020)	96	20	70	20.83%	93.75%
Post-template change cohort B (10/1/2020–12/22/2020)	44	18	25	40.91%	97.73%

Table 5. Summary of evidence (decision-relevant endpoints)

Outcome domain	Direction of effect	Evidence base	Certainty (qualitative)
BI-RADS: surveillance → upgrade → biopsy pathway	BI-RADS 3 pathway showed low cancer yield (1.7%) and clear escalation trigger	1 audit	Low–Moderate
LI-RADS: score assignment/documentation	Template changes improved LI-RADS scoring compliance	1 QI report	Low
LI-RADS structured report quality (completeness/usability)	Structured reports improved completeness, extraction, trust, and overall quality	1 comparative study	Low–Moderate

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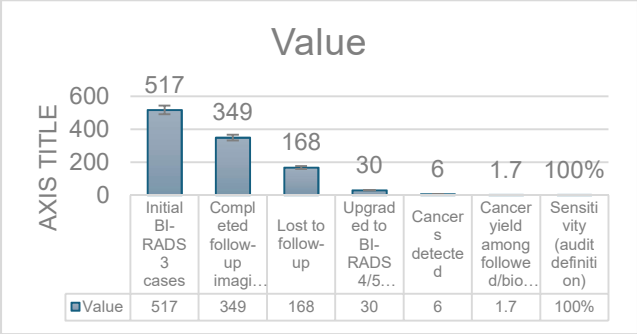

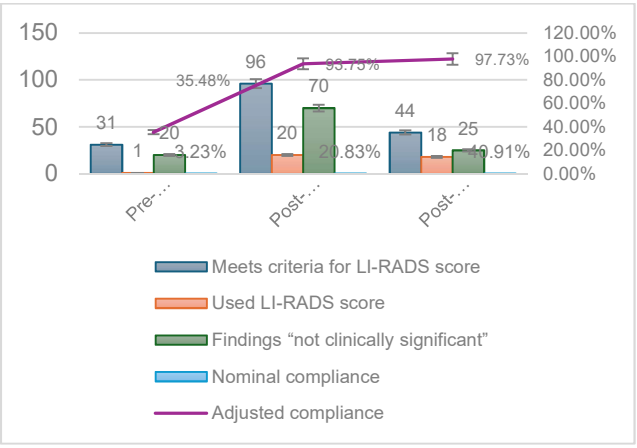

Clinician trust and perceived quality important mediators of tumor board decisions and treatment planning were also higher with structured reporting: trust mean 5.68 vs 4.96, linguistic quality 5.79 vs 4.83, and overall quality 5.75 vs 5.01 (all $p < 0.001$).[3] These outcomes support that LI-RADS-anchored templates can improve the clarity and completeness needed for management decisions, even when direct "management changed vs not changed" metrics are not reported.

3.6 Comparative Synthesis: BI-RADS versus LI-RADS: Across both systems, the shared mechanism of impact was improved standardization of outputs that directly map to action. BI-RADS evidence in this set most directly reflected surveillance vs biopsy escalation and outcomes of that pathway.[1] LI-RADS evidence emphasized (i) increasing consistent assignment of a management-linked category via templates and (ii) improvements in report completeness and clinician trust both prerequisites for consistent multidisciplinary decisions.[2,3]

However, no included study directly quantified changes in transplant listing, specific locoregional therapy choice, or tumor board concordance rates as a numerical endpoint; evidence for these pathways remained indirect, inferred through improved scoring compliance and report quality outcomes.[2,3]

3.7 Secondary Outcomes: Secondary outcomes were mostly clinician-facing quality measures (not patient outcome endpoints). Structured reporting improved:

- Completeness (missing key features: 31% FTR vs 2% SR).[3]
- Ease of information extraction (98% SR vs 86% FTR).[3]
- Clinician trust and perceived quality (higher Likert mean ratings across domains).[3]
- Documentation of LI-RADS categorization (adjusted compliance rising up to 97.73% in the post-template cohorts).[2]

Time-to-decision/time-to-treatment and objective downstream treatment endpoints were not consistently reported in the included evidence set.[1–3]

3.8 Summary of Evidence: Table 5 given above

DISCUSSION

This was a systematic review to determine the effect of standardised reporting systems (BI-RADS and LI-RADS) on downstream clinical decisions versus non-standardised narrative reporting. In general, the existing evidence indicates that category-based templates can enhance the actionability of radiology reports by making them more complete, less ambiguous, and more confident in clinicians, mechanisms that may translate into more consistent management decisions.[1–3] These results are consistent with the overall literature on structured reporting, where more report clarity, completeness, and usability have been observed to occur when the template is crafted in a manner that represents decision-critical aspects in a predictable format.[1-19-29]

In the BI-RADS evidence, the clinical meaning of the outcome was that BI-RADS categories would directly guide clinical management (short-interval follow-up vs biopsy). In a single-centre audit of BI-RADS 3 use, cancer yield was within the expected benchmark (<2%), suggesting that standardisation of categorisation is an appropriate way to operationalise surveillance, but not an immediate biopsy, in the selective use of diagnostic tests.[26-27]

In the case of LI-RADS, the consistency of the report and the quality of the report have been highlighted as the conditions to coherent hepatocellular carcinoma (HCC) pathways and multidisciplinary decision-making. Formatted reporting, coupled with a CEUS LI-RADS template, led to a significant decrease in missing key report elements (31% vs 2% in free-text and structured reports, respectively), and an improvement in ease of information extraction, clinician-rated trust, and overall quality.[2] Since the categories of the LI-RADS are designed to generate HCC management and facilitate communication across the MDT, these benefits are likely to lower the count of clarification cycles and promote more standardised consideration of the tumour board by categories linked with decisions, even when studies do not directly measure the effect on treatment choices.[13-12]

Although these are encouraging signs, the body of literature remains quite limited, with few studies, a predominantly single-centre design, and mixed results. Many studies report intermediate endpoints (completeness, compliance, satisfaction) instead of hard clinical endpoints (time-to-treatment, MDT concordance, survival).[20-23] Multicenter prospective assessments based on standardised decision outcomes (biopsy rates, follow-up adherence, treatment choice, MDT agreement) should be a priority in future studies, and implementation factors (training, workload, software integration) that might mediate the effect of structured reporting should be directly measured.[14-16-17-18]

CONCLUSION

The systematic review evaluated the effect of standardised radiology reporting templates, namely, BI-RADS and LI-RADS, in comparison with non-standardised narrative reporting on clinical decision-making. On the whole, the existing evidence suggests that structured, category-based reporting enhances the actionability of radiology reporting by making it more complete, less ambiguous, and delivering clearer, management-linked conclusions to referring clinicians and multidisciplinary teams.[1,2] These benefits are supported by wider evidence that demonstrates that structured reporting enhances the readability and consistency of important elements on which clinical decisions can be made.

In the case of BI-RADS, the evidence suggests that category-driven reporting operationalises a clinically relevant decision-making pathway, that is, surveillance versus escalation to biopsy, by connecting imaging interpretation to specific follow-up suggestions, which were demonstrated to work well in the selected group of appropriately selected cases, but not in others.[1] The nature and extent of the evidence indicated that the effectiveness of BI-RADS depends not alone on the consistency of reporting, but also on system-level processes (recall processes, schedules, and communication pathways) that can ensure that

In the case of LI-RADS, template-based reporting has demonstrable benefits for report integrity and interdisciplinary reporting, including fewer missing key reporting items, simpler information retrieval, and greater clinician trust and perceived report quality than in free-text reporting.

Although these are positive signals, the evidence base is still underdeveloped with single-center designs, mixed outcomes, and often use intermediate endpoints (completeness, usability) instead of clinical outcomes (time-to-treatment, MDT concordance, or patient outcomes). Harmonised decision endpoints and direct assessment of implementation factors that mediate clinical impact should be used in future multicenter prospective studies.

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