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The Impact of Laboratory Services on Multidisciplinary Clinical Decision-Making and Integrated Patient Care: A Review

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Abstract

Laboratory services play a pivotal role in modern healthcare systems by supporting accurate diagnosis, guiding treatment decisions, and enabling effective coordination among multidisciplinary clinical teams. As patient care increasingly relies on integrated and collaborative models, the contribution of laboratory services has expanded beyond test execution to active participation in clinical decision-making processes. This review aims to synthesize current evidence on the impact of laboratory services on multidisciplinary clinical decision-making and integrated patient care. A comprehensive review of peer-reviewed literature published between 2016 and 2025 was conducted across major biomedical databases, focusing on studies that examined laboratory involvement in multidisciplinary teams, clinical workflows, and patient outcomes. The findings indicate that timely and accurate laboratory data significantly enhance diagnostic precision, reduce medical errors, improve communication among healthcare professionals, and support personalized treatment planning. Effective integration of laboratory services within multidisciplinary teams was also associated with improved care coordination, patient safety, and clinical efficiency across various healthcare settings. The review highlights the strategic importance of laboratory services as a core component of integrated care models and emphasizes the need for stronger collaboration, optimized communication pathways, and supportive health system policies to maximize their impact on patient-centered care.

Keywords: Laboratory services; Multidisciplinary teams; Clinical decision-making; Integrated patient care; Diagnostic accuracy; Healthcare quality**.**

INTRODUCTION

Clinical laboratory services constitute a fundamental pillar of healthcare delivery, contributing directly to disease prevention, diagnosis, treatment monitoring, and prognosis. It is estimated that a substantial proportion of clinical decisions—often cited as up to 70%—are influenced by laboratory test results, underscoring the strategic importance of laboratory medicine in patient care pathways (Plebani, 2017). Over recent decades, the role of laboratory services has evolved from a predominantly technical, back-end function to an integrated clinical partner actively supporting multidisciplinary clinical decision-making.

The increasing complexity of patient conditions, particularly with the rise of chronic diseases, multimorbidity, and aging populations, has necessitated the adoption of multidisciplinary team (MDT) models across healthcare settings. These teams commonly involve physicians, nurses, pharmacists, laboratory professionals, radiologists, and allied health staff collaborating to deliver coordinated, patient-centered care (Reeves et al., 2018). Within this context, laboratory services provide critical, objective data that inform diagnostic clarification, therapeutic selection, and ongoing evaluation of treatment effectiveness. Timely access to accurate laboratory information is essential for aligning clinical perspectives and achieving consensus within MDTs.

Integrated patient care models emphasize continuity, coordination, and communication across disciplines and care levels. Laboratory services play a central role in enabling this integration by linking diagnostic processes with clinical decision-making and follow-up care. Delays in test turnaround time, misinterpretation of results, or inadequate communication of critical values can disrupt care pathways and increase the risk of diagnostic errors and adverse patient outcomes (Lippi & Plebani, 2020).

Conversely, effective laboratory–clinician collaboration has been associated with improved diagnostic accuracy, reduced unnecessary testing, and enhanced patient safety.

Despite their importance, laboratory professionals are often underrepresented in formal multidisciplinary discussions, and their contributions to clinical decision-making may be undervalued or insufficiently documented (Hallworth et al., 2019). Advances in laboratory automation, digital health systems, and decision-support technologies have further expanded the potential for laboratories to support integrated care, yet these capabilities are not always optimally utilized. Furthermore, variability in organizational structures, governance, and communication frameworks continues to influence how effectively laboratory services are integrated into multidisciplinary care models.

Given these challenges and opportunities, there is a growing need to critically examine the impact of laboratory services on multidisciplinary clinical decision-making and integrated patient care. This review seeks to address this gap by synthesizing contemporary evidence on how laboratory services contribute to collaborative clinical processes and patient outcomes across healthcare settings. By highlighting best practices, system-level enablers, and existing barriers, the review aims to inform healthcare leaders, clinicians, and policymakers on strategies to strengthen laboratory integration and optimize patient-centered, multidisciplinary care.

Conceptual Foundations

The conceptual foundations underpinning the impact of laboratory services on multidisciplinary clinical decision-making and integrated patient care are grounded in three interrelated domains: multidisciplinary care models, integrated care frameworks, and clinical decision-making theory. Together, these perspectives explain how laboratory services function as a connective and enabling component within modern healthcare systems.

Multidisciplinary team (MDT) models are designed to bring together diverse professional expertise to address complex patient needs through collaborative decision-making. Within these models, laboratory services provide objective, evidence-based data that support shared understanding among clinicians. Laboratory results contribute to diagnostic confirmation, differential diagnosis, risk stratification, and monitoring of disease progression or treatment response. Unlike narrative clinical observations, laboratory data offer standardized, quantifiable inputs that can be interpreted collectively by MDT members, thereby reducing subjectivity and variability in clinical judgments. Effective MDT functioning depends not only on the availability of laboratory data but also on timely communication, interpretive support, and alignment between laboratory professionals and clinical teams.

Integrated patient care emphasizes continuity, coordination, and coherence across the care continuum, including prevention, diagnosis, treatment, and follow-up. From this perspective, laboratory services act as an informational backbone linking different stages of care and multiple clinical disciplines. Integrated care frameworks highlight the importance of seamless information flow, where laboratory results are accessible, interpretable, and actionable across departments and care settings. When laboratory services are well integrated, they facilitate coordinated treatment planning, reduce duplication of testing, and support longitudinal patient monitoring. Conversely, fragmented laboratory processes—such as delayed reporting or poor result integration into electronic health records—can undermine care coordination and weaken clinical decision-making.

Clinical decision-making theory emphasizes the integration of best available evidence, clinical expertise, and patient values. Laboratory services directly contribute to the “best available evidence” component by generating diagnostic and prognostic information that informs clinical reasoning. In multidisciplinary contexts, laboratory data help align diverse professional perspectives around a shared evidentiary base, enabling consensus-driven decisions. The reliability, validity, and interpretability of laboratory tests are therefore critical determinants of decision quality. Decision-making models also recognize the role of cognitive and system-level factors, such as information overload, communication barriers, and time pressure, all of which influence how laboratory information is used in practice.

A key conceptual element linking laboratory services to multidisciplinary decision-making is knowledge translation—the process by which test results are transformed into clinical action. This involves not only technical accuracy but also effective communication of results, interpretive guidance, and clinical relevance. Conceptual models increasingly recognize laboratory professionals as knowledge partners who support clinicians in interpreting complex or ambiguous results. Structured reporting, critical value alerts, and consultative interactions enhance the integration of laboratory knowledge into clinical workflows.

In summary, the conceptual foundation of this review positions laboratory services as an integral component of multidisciplinary and integrated care systems. By supporting evidence-based decision-making, facilitating communication, and enabling coordinated care pathways, laboratory services contribute directly to the quality, safety, and effectiveness of patient-centered healthcare.

METHODOLOGY

This review adopted an integrative review design to comprehensively examine the impact of laboratory services on multidisciplinary clinical decision-making and integrated patient care. An integrative approach was selected to allow the inclusion and synthesis of diverse evidence sources, including quantitative, qualitative, and mixed-method studies, which is appropriate for complex healthcare system topics involving organizational, clinical, and collaborative dimensions.

A systematic literature search was conducted across major biomedical and health sciences databases, including PubMed, Scopus, Web of Science, and CINAHL. The search covered publications from January 2016 to March 2025 to ensure the inclusion of recent and relevant evidence reflecting contemporary laboratory practices and integrated care models. Key search terms and Boolean combinations included: *laboratory services*, *laboratory medicine*, *multidisciplinary teams*, *clinical decision-making*, *integrated care*, *interprofessional collaboration*, and *patient outcomes*. Reference lists of included articles were also screened to identify additional relevant studies.

Studies were included if they:

1. examined the role or impact of laboratory services within multidisciplinary or interprofessional care settings;
2. addressed clinical decision-making, care integration, or patient-related outcomes;
3. were published in peer-reviewed journals; and
4. were available in English.

Studies were excluded if they focused solely on analytical laboratory techniques without clinical application, lacked relevance to multidisciplinary care, were conference abstracts only, or were opinion pieces without empirical or conceptual grounding.

Titles and abstracts were independently screened for relevance, followed by full-text review of eligible articles. Data extracted included study design, healthcare setting, role of laboratory services, type of multidisciplinary interaction, key outcomes, and principal findings related to decision-making and care integration.

Findings were synthesized thematically, with studies grouped according to clinical context, laboratory function, and outcome domains. Methodological quality and relevance were appraised descriptively to ensure balanced interpretation of evidence. The synthesis emphasized recurring patterns, enabling factors, and reported impacts of laboratory integration within multidisciplinary clinical workflows.

Role of Laboratory Services in Multidisciplinary Clinical Decision-Making

Laboratory services play a central and multifaceted role in multidisciplinary clinical decision-making by providing objective, timely, and actionable information that underpins collaborative clinical judgments. Within multidisciplinary teams (MDTs), laboratory data serve as a common evidentiary foundation that aligns diverse professional perspectives, supports consensus building, and enhances the quality of clinical decisions across the continuum of care.

One of the most critical contributions of laboratory services to MDT decision-making lies in diagnostic confirmation and differential diagnosis. Laboratory tests provide quantitative biomarkers, microbiological evidence, and pathological findings that validate or challenge initial clinical hypotheses. In complex cases—such as sepsis, cancer, autoimmune disorders, and metabolic diseases—laboratory results enable MDTs to narrow diagnostic possibilities, reduce uncertainty, and avoid misdiagnosis. The availability of accurate laboratory data supports shared clinical reasoning among physicians, nurses, pharmacists, and other specialists, ensuring that diagnostic decisions are evidence-based rather than reliant on isolated clinical impressions.

Laboratory services are integral to ongoing clinical decision-making through continuous monitoring of disease status and therapeutic effectiveness. Serial laboratory measurements allow MDTs to assess treatment response, detect early signs of deterioration or complications, and adjust care plans accordingly. For example, laboratory indicators such as inflammatory markers, organ function tests, and therapeutic drug monitoring results inform real-time treatment modifications. In multidisciplinary settings, these data facilitate coordinated decision-making by ensuring that all team members operate with up-to-date clinical information.

Laboratory data contribute significantly to risk stratification and prognostic evaluation, which are essential for prioritizing care and allocating resources. MDTs rely on laboratory-derived risk scores, biomarker profiles, and trend analyses to identify high-risk patients and determine appropriate levels of intervention. This is particularly relevant in intensive care units, emergency departments, oncology services, and chronic disease management programs. By supporting early identification of clinical deterioration or adverse outcomes, laboratory services enable proactive, team-based decision-making that improves patient safety and outcomes.

Effective multidisciplinary decision-making depends on timely communication, especially when laboratory results indicate urgent or life-threatening conditions. The structured reporting and prompt notification of critical values allow MDTs to initiate rapid interventions and coordinate responses across disciplines. Laboratory professionals play an essential role in ensuring that results are not only delivered quickly but also contextualized and clearly communicated. This reduces delays, minimizes misinterpretation, and strengthens trust between laboratory services and clinical teams.

Beyond test generation, laboratory services increasingly provide interpretive and consultative support to MDTs. Laboratory professionals assist clinicians in selecting appropriate tests, understanding test limitations, and interpreting complex or borderline results. This consultative role enhances decision quality by bridging knowledge gaps and supporting evidence-based practice. In multidisciplinary discussions, laboratory input contributes to more nuanced clinical judgments, particularly in cases involving advanced diagnostics, emerging biomarkers, or conflicting clinical data.

Multidisciplinary clinical environments are inherently complex, with potential for variability in professional opinions. Laboratory services help reduce this variability by offering standardized, reproducible data that anchor discussions in objective evidence. This consistency supports equitable decision-making, reduces unnecessary testing or interventions, and promotes alignment with clinical guidelines and protocols. As a result, laboratory integration strengthens the reliability and transparency of MDT decisions.

Table 1. Contributions of Laboratory Services to Multidisciplinary Clinical Decision-Making

Clinical Decision Domain	Laboratory Contribution	Impact on MDT Decision-Making
Diagnostic confirmation	Biomarkers, microbiology, pathology results	Reduces diagnostic uncertainty and aligns team consensus
Differential diagnosis	Comparative and exclusionary test data	Supports evidence-based narrowing of diagnoses
Treatment monitoring	Serial laboratory measurements	Enables timely adjustment of treatment plans
Risk stratification	Prognostic markers and risk scores	Prioritizes care and resource allocation
Critical value reporting	Rapid communication of urgent results	Facilitates prompt, coordinated interventions
Interpretive support	Test selection guidance and result interpretation	Improves decision accuracy and clinician confidence
Standardization of care	Objective, reproducible data	Reduces variability and supports guideline adherence

Overall, laboratory services function as a decision-enabling resource within multidisciplinary teams. By supporting diagnosis, monitoring, risk assessment, communication, and interpretation, laboratories enhance the effectiveness, efficiency, and safety of collaborative clinical decision-making and contribute directly to integrated, patient-centered care.

Impact on Integrated Patient Care Outcomes

The effective integration of laboratory services within multidisciplinary clinical teams has a substantial and measurable impact on patient care outcomes. By supporting coordinated decision-making, laboratory services contribute to improvements across diagnostic accuracy, patient safety, care continuity, treatment effectiveness, and overall healthcare quality. Integrated patient care models rely on timely, reliable, and interpretable laboratory information to align clinical actions across disciplines and care settings.

Integrated laboratory services enhance diagnostic accuracy by ensuring that clinicians across disciplines have access to consistent and validated diagnostic data. Early and precise laboratory testing reduces diagnostic uncertainty and minimizes delays in initiating appropriate treatment. In integrated care pathways, rapid laboratory turnaround times support timely clinical decisions, particularly in acute and high-risk settings such as emergency departments and intensive care units. Improved diagnostic timeliness has been associated with shorter hospital stays, reduced complications, and better clinical outcomes.

Laboratory integration plays a critical role in reducing medical errors, including diagnostic errors, inappropriate treatment selection, and medication-related adverse events. Clear communication of laboratory results, particularly critical values, enables coordinated clinical responses and prevents missed or delayed interventions. In multidisciplinary environments, standardized laboratory reporting and decision-support mechanisms reduce the risk of misinterpretation and fragmented care. As a result, integrated laboratory services contribute to enhanced patient safety and lower incidence of preventable harm.

Integrated patient care requires seamless coordination across departments, specialties, and care transitions. Laboratory services support this coordination by providing longitudinal data that inform care planning, follow-up, and evaluation across the patient journey. Shared access to laboratory results through electronic health records facilitates continuity of care and reduces duplication of testing. In chronic disease management, consistent laboratory monitoring supports multidisciplinary collaboration and ensures alignment between primary, secondary, and tertiary care providers.

Laboratory data are central to treatment optimization and personalized care. Biomarkers, therapeutic drug monitoring, and genetic or molecular tests guide treatment selection, dosing, and modification. Integrated laboratory services enable multidisciplinary teams to tailor interventions to individual patient needs, improving treatment effectiveness while minimizing adverse effects. This personalized approach supports patient-centered care and aligns with modern precision medicine strategies.

Integrated laboratory services indirectly influence patient experience by reducing waiting times, minimizing repeated testing, and improving communication among care providers. When laboratory processes are well coordinated within multidisciplinary teams, patients experience smoother care pathways and clearer clinical decision-making. Improved diagnostic confidence and coordinated treatment plans enhance patient trust, engagement, and satisfaction with care delivery.

Beyond individual patient outcomes, integrated laboratory services contribute to system-level improvements, including reduced length of hospital stay, more efficient resource utilization, and cost containment. By supporting accurate and timely decisions, laboratories help prevent unnecessary investigations and interventions. These efficiencies strengthen the sustainability of healthcare systems and support value-based care models.

Table 2. Impact of Integrated Laboratory Services on Patient Care Outcomes

Outcome Domain	Role of Laboratory Integration	Observed Impact on Patient Care
Diagnostic accuracy	Timely and validated test results	Earlier diagnosis and improved clinical outcomes
Patient safety	Critical value reporting and standardization	Reduced medical errors and adverse events
Care coordination	Shared access to laboratory data	Improved continuity and reduced duplication
Treatment effectiveness	Biomarkers and therapeutic monitoring	Personalized and optimized treatment plans
Patient experience	Streamlined testing and communication	Higher patient satisfaction and trust
Healthcare efficiency	Reduction in unnecessary testing	Shorter hospital stays and cost savings

In summary, the integration of laboratory services within multidisciplinary care frameworks has a profound impact on patient outcomes and healthcare performance. By enhancing diagnostic accuracy, safety, coordination, personalization, and efficiency, laboratory services serve as a foundational element of integrated, high-quality patient care.

Evidence Synthesis & Integrated Conceptual Model

This review synthesizes evidence demonstrating that laboratory services function as a critical integrative mechanism within multidisciplinary healthcare systems, influencing both clinical decision-making processes and patient care outcomes. Across diverse clinical settings, the literature consistently highlights laboratory services as a central informational hub that connects diagnostic activities, therapeutic decisions, and coordinated care delivery. The synthesis of findings reveals recurring pathways through which laboratory integration strengthens multidisciplinary collaboration and enhances patient-centered outcomes.

Evidence from acute care, chronic disease management, oncology, emergency medicine, and critical care settings indicates that laboratory services underpin multidisciplinary decision-making by providing standardized, objective, and timely data. When laboratory information is effectively integrated into multidisciplinary team (MDT) workflows, it supports shared situational awareness and reduces fragmentation of care. Studies consistently report that early access to reliable laboratory results improves diagnostic confidence, facilitates consensus among clinicians, and accelerates treatment initiation.

Across integrated care models, laboratory services contribute to both vertical integration (across levels of care) and horizontal integration (across disciplines). Vertically, laboratory data support continuity from diagnosis through follow-up and monitoring. Horizontally, they enable alignment among physicians, nurses, pharmacists, and allied health professionals. The evidence indicates that breakdowns in laboratory communication—such as delayed reporting or lack of interpretive support—are associated with diagnostic delays, duplicated testing, and inconsistent clinical decisions.

The synthesis identifies several key mechanisms through which laboratory services influence integrated patient care outcomes. First, information timeliness is a dominant factor; rapid turnaround times and real-time reporting enhance responsiveness and clinical coordination. Second, data reliability and standardization ensure that MDT decisions are grounded in trusted evidence, reducing variability in care. Third, interpretive and consultative support provided by laboratory professionals strengthens clinical reasoning, particularly in complex or ambiguous cases. Fourth, digital integration, including electronic health records and clinical decision-support systems, amplifies the impact of laboratory services by embedding results directly into clinical workflows.

These mechanisms collectively translate laboratory outputs into clinical action, enabling MDTs to move efficiently from data interpretation to decision implementation. The evidence suggests that laboratories achieve the greatest impact when they are not isolated technical units but active partners in clinical knowledge exchange.

Based on the synthesized evidence, an integrated conceptual model is proposed to illustrate how laboratory services influence multidisciplinary decision-making and patient care outcomes. The model positions laboratory services at the core of the care system, interfacing with multidisciplinary teams through diagnostic, monitoring, and interpretive functions. These interactions feed into collaborative clinical decision-making processes, which in turn drive integrated patient care outcomes.

In the model, laboratory inputs (accuracy, timeliness, communication, and interpretive support) enable high-quality multidisciplinary decisions. These decisions influence proximal outcomes such as diagnostic accuracy, treatment appropriateness, and care coordination, which subsequently lead to distal outcomes including patient safety, satisfaction, clinical effectiveness, and system efficiency. Feedback loops within the model highlight continuous learning and quality improvement, whereby patient outcomes inform refinements in laboratory processes and multidisciplinary practices.

The integrated conceptual model emphasizes that laboratory services are not merely supportive but foundational to multidisciplinary and integrated care. It underscores the importance of organizational structures, governance, and digital infrastructure in maximizing laboratory impact. By visualizing the pathways from laboratory services to patient outcomes, the model provides a framework for healthcare leaders and policymakers to identify leverage points for improving care integration, reducing errors, and enhancing value-based healthcare delivery.

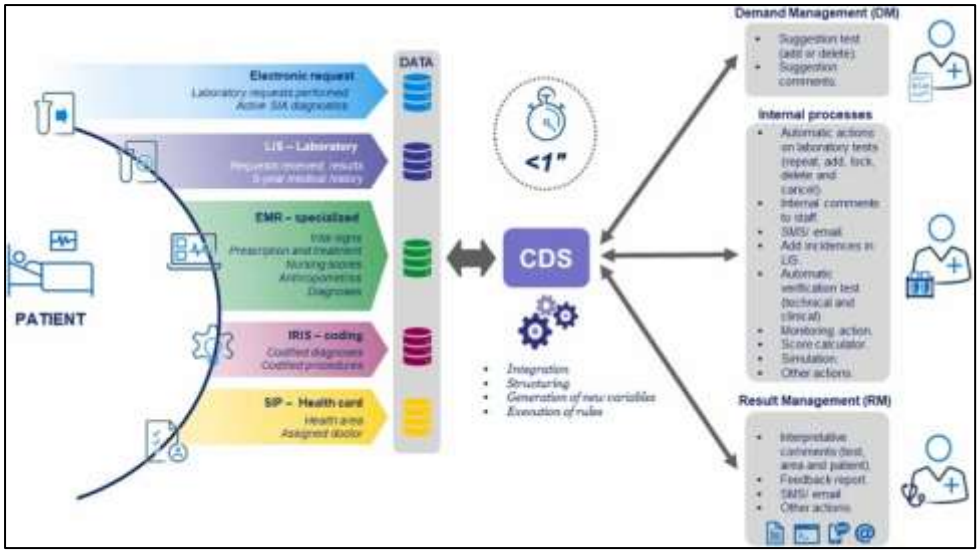

Figure 1. Integrated Conceptual Model of Laboratory Services Impact on Multidisciplinary Clinical Decision-Making and Patient Care Outcomes

Overall, the evidence synthesis confirms that effective laboratory integration strengthens multidisciplinary collaboration and improves patient care outcomes. The proposed conceptual model offers a coherent framework to guide future research, practice innovation, and policy development aimed at optimizing the role of laboratory services in integrated healthcare systems.

discussion

This review highlights the pivotal role of laboratory services in strengthening multidisciplinary clinical decision-making and advancing integrated patient care. The synthesized evidence demonstrates that laboratory services function not merely as diagnostic support units but as core contributors to collaborative clinical processes, influencing decisions across diagnosis, treatment, monitoring, and follow-up. By providing timely, reliable, and interpretable data, laboratory services enable multidisciplinary teams (MDTs) to align clinical perspectives, reduce uncertainty, and deliver coordinated, patient-centered care.

A key finding of this review is the centrality of timeliness and communication in translating laboratory data into effective clinical action. Studies consistently show that rapid turnaround times and structured reporting of critical values enhance responsiveness and reduce delays in care, particularly in acute and high-risk settings. These findings align with broader patient safety literature emphasizing that delays or breakdowns in diagnostic communication are a major source of preventable harm. Effective laboratory–clinician communication, supported by digital systems and clear escalation pathways, emerges as a critical enabler of integrated care.

The review also underscores the importance of interpretive and consultative roles of laboratory professionals within MDTs. Beyond generating test results, laboratory specialists contribute clinical insight that supports appropriate test selection, contextual interpretation, and evidence-based decision-making. This consultative engagement is particularly valuable in complex cases involving advanced diagnostics, overlapping comorbidities, or ambiguous findings. The evidence suggests that MDTs that actively incorporate laboratory expertise achieve more consistent and accurate decisions, reinforcing the concept of laboratories as knowledge partners rather than peripheral service providers.

Another important theme is the contribution of laboratory services to care coordination and continuity. Integrated care models depend on shared access to longitudinal patient data, and laboratory results provide a common informational thread across departments and care transitions. When laboratory data are seamlessly integrated into electronic health records and accessible to all MDT members, duplication of testing is reduced, follow-up is improved, and care plans are better aligned. These findings support international calls for interoperable health information systems and integrated diagnostic pathways, as promoted by organizations such as the World Health Organization.

Despite these benefits, the review identifies persistent challenges and gaps that limit the full impact of laboratory services on multidisciplinary decision-making. Organizational silos, insufficient representation of laboratory professionals in MDT meetings, and variability in communication practices continue to undermine integration. Additionally, workload pressures and resource constraints can affect turnaround times and limit opportunities for consultative engagement. These barriers highlight the need

for supportive governance structures, workforce planning, and leadership commitment to diagnostic integration.

The growing role of digital transformation and decision-support technologies presents both opportunities and challenges. Automation, clinical decision-support systems, and artificial intelligence have the potential to enhance laboratory efficiency, standardization, and predictive capability. However, the evidence indicates that technological solutions alone are insufficient without parallel investments in workflow redesign, clinician training, and interprofessional collaboration. Effective integration requires aligning technology with clinical needs and ensuring that laboratory outputs are presented in clinically meaningful and actionable formats.

From a policy and management perspective, the findings of this review suggest that laboratory services should be explicitly recognized within integrated care strategies and quality improvement frameworks. Performance metrics should extend beyond analytical accuracy to include indicators such as turnaround time, communication effectiveness, MDT engagement, and impact on patient outcomes. Embedding laboratory representation in clinical governance structures and multidisciplinary forums may further enhance collaboration and accountability.

In summary, this discussion reinforces the conclusion that laboratory services are foundational to high-quality, integrated patient care. Their impact on multidisciplinary decision-making is mediated through timely information delivery, interpretive support, and effective communication within MDTs. Addressing organizational, technological, and cultural barriers is essential to fully realize this potential. Future research should focus on developing standardized measures of laboratory integration and evaluating interventions that strengthen laboratory–MDT collaboration across diverse healthcare contexts.

CONCLUSION

This review demonstrates that laboratory services are a fundamental and strategic component of multidisciplinary clinical decision-making and integrated patient care. The evidence synthesized highlights that laboratory services extend well beyond their traditional diagnostic role, functioning as a central informational and knowledge resource that supports collaborative clinical reasoning, coordinated care delivery, and patient-centered outcomes. When effectively integrated into multidisciplinary team (MDT) workflows, laboratory services enhance diagnostic accuracy, improve treatment monitoring, reduce medical errors, and strengthen continuity of care across clinical settings.

The findings underscore that the impact of laboratory services on patient outcomes is mediated by several critical factors, including timeliness of test results, reliability and standardization of data, effective communication of critical information, and the availability of interpretive and consultative support from laboratory professionals. These elements enable MDTs to make informed, evidence-based decisions and align clinical actions across disciplines and care transitions. Conversely, fragmented laboratory processes and limited interprofessional engagement can undermine the potential benefits of multidisciplinary care models.

Importantly, this review highlights the need for healthcare systems to formally recognize laboratory services as integral partners in integrated care strategies and clinical governance frameworks. Investments in digital integration, workforce development, and collaborative communication structures are essential to maximizing laboratory contributions to care quality and safety. In conclusion, strengthening the integration of laboratory services within multidisciplinary clinical decision-making represents a critical pathway toward improving patient outcomes, enhancing healthcare efficiency, and advancing high-quality, integrated healthcare systems.

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