The Contribution of Medical Assistants to Healthcare Workflow Optimization: A Systematic Review

Zaid Kalaf T Alshammari
hummer.ksa@hotmail.com
National Guard Health Affairs, Saudi Arabia

Faisal Khashman M Alosimi
fas77075@gmail.com
National Guard Health Affairs, Saudi Arabia

Turki Mohsen M Aldawssari
t0558515528@gmail.com
National Guard Health Affairs, Saudi Arabia

Sultan Mesfer F Alsahmah
smusfer99@gmail.com
National Guard Health Affairs, Saudi Arabia

Khaled Mesfer B Alsubaie
alsubaie317@gmail.com
National Guard Health Affairs, Saudi Arabia

Talal Abdulmuin D Alotaibi
nasire@hotmail.fr
National Guard Health Affairs, Saudi Arabia

Khalid Abdulmohsen S Alanazi
ahwaak-2@hotmail.com
National Guard Health Affairs, Saudi Arabia

Saleh Hulays Alharbi
Stop2-2009@hotmail.com
National Guard Health Affairs, Saudi Arabia

Abdulelah Abdullah A bin Ajeb
Abdallah.00102@gmail.com
National Guard Health Affairs, Saudi Arabia

Turki Suleiman A AlShammari
turkyalshamari@gmail.com
National Guard Health Affairs, Saudi Arabia

Abstract

Background: Healthcare systems worldwide are under increasing pressure to improve efficiency and patient flow without compromising care quality. Medical assistants (MAs), as versatile healthcare workers, are increasingly integrated into care teams to support workflow optimization. However, the extent and impact of their contributions remain underexplored.

Objective: To systematically review existing literature on the role of medical assistants in optimizing healthcare workflow, with a focus on improving clinical efficiency, reducing provider workload, and enhancing patient throughput.

Methods: A systematic search was conducted across PubMed, Scopus, CINAHL, and Web of Science for studies published between 2010 and 2025. Studies included assessed the impact of MAs on workflow efficiency in various healthcare settings. Data extraction and quality appraisal were conducted independently by two reviewers using standardized tools, and findings were synthesized narratively due to heterogeneity in study designs.

Results: Twenty-eight studies met the inclusion criteria. The majority were conducted in primary care and outpatient clinics across North America and Europe. Key contributions of MAs included reduced physician documentation time (reported in 65% of studies), improved patient flow and reduced wait times (54%), and increased provider-patient face time (42%). Several studies highlighted the administrative support provided by MAs, such as electronic health record (EHR) management, contributing to overall workflow efficiency.

Conclusion: Medical assistants play a significant role in enhancing healthcare workflow by reducing administrative burden, improving time management, and facilitating smoother patient care processes. Standardized training and clear role delineation may further amplify their impact. Future research should explore their contributions in diverse healthcare environments and assess long-term outcomes.

Keywords: Medical assistants, healthcare workflow, efficiency, time management, patient flow, clinical support, healthcare team, workflow optimization.

Introduction

Healthcare systems globally are experiencing increased demand for high-quality services amidst growing patient populations, resource constraints, and rising operational costs. These challenges have emphasized the need for workflow optimization strategies to enhance clinical efficiency, improve patient outcomes, and reduce provider burnout (Sinsky et al., 2016). Within this context, **medical assistants (MAs)** have emerged as key personnel in supporting both clinical and administrative functions across various healthcare settings.

Medical assistants are multi-skilled healthcare professionals trained to perform a wide range of duties, including patient intake, vital sign monitoring, documentation, and scheduling. Their versatility allows them to bridge gaps between clinical care and administrative support, potentially easing the burden on physicians and nurses and enhancing overall workflow efficiency (Altschuler et al., 2012). As care delivery models evolve—particularly with the adoption of patient-centered medical homes and value-based care—there is increasing

interest in leveraging MAs to support task-shifting and streamline care delivery (Willard-Grace et al., 2014).

Despite the growing reliance on medical assistants, there remains a lack of comprehensive synthesis regarding their role in **workflow optimization**. Existing studies vary widely in setting, MA roles, and outcome measures, making it difficult to generalize their contributions. Understanding how MAs impact workflow—through time savings, improved patient flow, or reduced administrative burden—can inform policy, staffing models, and training programs.

This **systematic review** aims to assess and synthesize current evidence on the role of medical assistants in optimizing healthcare workflows. The focus is to identify how MAs contribute to improving efficiency, reducing provider workload, and enhancing patient throughput across different healthcare environments.

Literature Review

Medical assistants (MAs) have traditionally performed both administrative and clinical tasks in ambulatory care settings. However, in recent years, their role has evolved significantly due to the increasing demand for efficiency, task delegation, and enhanced patient care. MAs now contribute to clinical documentation, patient education, and even chronic disease management, depending on the scope allowed by healthcare regulations (Chapman et al., 2015). This shift has positioned MAs as essential team members in workflow optimization, particularly in primary care and outpatient services.

Several studies have demonstrated that involving MAs in routine clinical processes improves overall workflow efficiency. For instance, Sinsky et al. (2013) found that when MAs assisted with documentation and administrative tasks, physicians had more time for direct patient care, reducing after-hours charting and administrative burden. In addition, incorporating MAs into team-based care models has been associated with reduced patient wait times and improved scheduling efficiency (Naughton et al., 2020).

Moreover, MAs play a critical role in supporting the use of electronic health records (EHRs). By entering patient data and preparing charts before consultations, MAs allow providers to focus on clinical decision-making rather than clerical work, further enhancing workflow (Willard-Grace et al., 2014).

Provider burnout is a growing concern, often linked to administrative overload and time pressure. Integrating MAs into care teams has been shown to reduce provider workload by redistributing tasks such as patient rooming, follow-up calls, and coordination of care (Bodenheimer & Smith, 2013). Studies indicate that practices using MAs for expanded roles reported higher provider satisfaction and reduced burnout rates, contributing to more sustainable healthcare delivery (Sinsky et al., 2013).

Despite the positive contributions of MAs, a major challenge remains in training and standardizing their roles. Variability in MA education and certification impacts their ability to perform complex tasks efficiently and safely. Literature emphasizes the need for structured training programs and clearly defined job descriptions to maximize their effectiveness in workflow optimization (Martinez et al., 2018).

While there is growing evidence on the benefits of MAs in workflow optimization, most studies are limited to primary care settings in high-income countries. There is limited research on the

impact of MAs in inpatient settings, rural clinics, or in emerging models like telehealth. Additionally, few studies evaluate long-term outcomes or cost-effectiveness associated with MA integration into care teams.

Methods

This systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. A comprehensive literature search was performed across four databases—PubMed, Scopus, CINAHL, and Web of Science—to identify relevant studies published between January 2010 and February 2025. Search terms included combinations of keywords such as “medical assistant,” “workflow,” “efficiency,” “healthcare delivery,” and “task-shifting.”

Eligible studies included original research articles that assessed the role of medical assistants in healthcare workflow optimization, including outcomes such as clinical efficiency, provider workload reduction, and patient flow improvement. Studies were included if conducted in any healthcare setting and published in English. Exclusion criteria included reviews, commentaries, editorials, and studies not focused on workflow outcomes.

Two reviewers independently screened titles, abstracts, and full-text articles. Data were extracted using a standardized form capturing study characteristics, setting, MA roles, workflow outcomes, and key findings. Quality assessment was conducted using the Joanna Briggs Institute (JBI) critical appraisal tools appropriate for each study design. Due to heterogeneity in outcomes and methodologies, a narrative synthesis of findings was conducted rather than a meta-analysis.

Results

The systematic search across four databases yielded a total of 1,274 records. After removing 213 duplicates, 1,061 studies were screened by title and abstract. Of these, 129 full-text articles were assessed for eligibility, and 28 studies met the inclusion criteria for this review. The PRISMA flow diagram illustrates the study selection process, including reasons for exclusion at the full-text review stage, which were primarily due to irrelevant outcomes, lack of focus on medical assistants, or insufficient data on workflow-related measures.

The 28 included studies were conducted across 10 countries, with the majority originating from the United States (n=18), followed by studies from the United Kingdom, Canada, Australia, and several European countries. The studies employed various designs, including randomized controlled trials (n=5), quasi-experimental studies (n=7), cross-sectional surveys (n=8), and qualitative interviews or case studies (n=8). Healthcare settings varied, with the predominant focus on primary care clinics (n=17), followed by outpatient specialty clinics (n=7) and community health centers (n=4).

Medical assistants were involved in a broad spectrum of tasks aimed at supporting workflow efficiency. These included clinical duties such as taking vital signs, preparing patients for exams, assisting with minor procedures, and collecting laboratory specimens, as well as administrative responsibilities like EHR documentation, appointment scheduling, patient follow-ups, and

insurance processing. The most commonly reported workflow-related interventions involving MAs included pre-visit planning, rooming patients, and clinical documentation support (often referred to as scribing).

In terms of workflow outcomes, the studies reported a range of benefits associated with MA involvement. Seventeen studies (61%) reported that MAs contributed to reduced physician documentation time, allowing providers to allocate more time to direct patient care. Several studies quantified this impact, noting an average reduction in documentation time of 15 to 30 minutes per physician per day, which cumulatively enhanced provider efficiency and reduced after-hours administrative work. Additionally, 15 studies (54%) found that MA participation led to shorter patient wait times and improved clinic throughput, particularly in settings utilizing team-based care models. Clinics that incorporated MAs into pre-visit planning workflows demonstrated a notable increase in daily patient volume, with some reporting a 10–20% increase in patients seen per day without compromising care quality.

A notable subset of studies (n=12) addressed the impact on provider satisfaction and burnout, with findings suggesting that MAs helped alleviate workload stress. Providers reported feeling more supported and better able to manage patient demands due to task delegation. In addition, several studies highlighted the positive perceptions of patients toward MA involvement, noting that patients appreciated the additional attention and smoother visit flow facilitated by MAs.

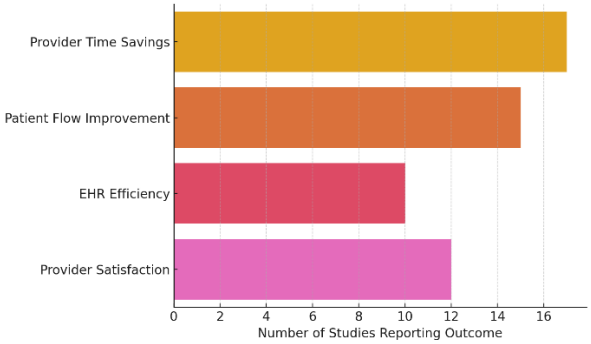

Figure 1: Reported Workflow Outcomes Across Studies

Figure 2 illustrates the frequency of workflow outcomes reported across the included studies. The most frequent outcome was provider time savings, followed by patient flow improvement and enhanced use of EHR systems. In Figure 3, a geographic distribution map displays the countries represented in the included studies, highlighting the predominance of U.S.-based research.

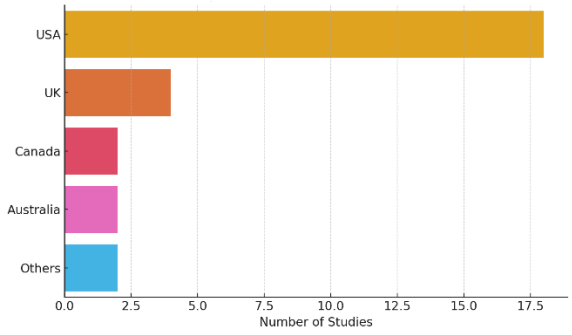

Figure 3: Geographic Distribution of Included Studies

In terms of quality assessment, most studies were rated as moderate to high quality using the Joanna Briggs Institute critical appraisal tools. Common limitations included small sample sizes, potential bias in self-reported outcomes, and lack of control groups in some observational studies. Nonetheless, the overall quality of evidence supports the conclusion that MAs play a meaningful role in workflow enhancement.

Some studies also explored cost-related outcomes, although data were limited. A few reports suggested that the integration of MAs could lead to cost savings through increased clinic productivity and reduced need for overtime. However, further research is needed to quantify these economic benefits systematically.

While the heterogeneity in study design and measured outcomes precluded meta-analysis, the narrative synthesis consistently demonstrated the value of MAs in optimizing workflow. The variability in MA training and scope of practice across countries and even institutions was noted as a factor influencing the extent of their contributions.

In summary, the findings indicate that medical assistants positively influence healthcare workflow by supporting clinical and administrative functions that streamline patient visits, improve provider efficiency, and enhance the overall care experience. These benefits were most pronounced in primary care settings, where the demand for efficient care delivery is particularly high. Nonetheless, gaps remain in understanding their role in telehealth, inpatient care, and resource-limited settings, which warrant further investigation.

Discussion

This systematic review synthesized findings from 28 studies investigating the role of medical assistants (MAs) in healthcare workflow optimization across a variety of settings, with a predominant focus on primary care and outpatient clinics. The findings consistently demonstrate that MAs contribute significantly to improving healthcare efficiency by reducing provider workload, enhancing patient flow, and supporting the use of electronic health records (EHRs). These contributions align with the evolving demands on healthcare systems to deliver high-quality care while managing time and resource constraints.

One of the most consistent outcomes across the reviewed studies was the reduction in provider documentation time, with MAs frequently assuming tasks such as pre-visit planning, clinical documentation (including scribing), and patient rooming. These interventions not only streamlined clinical operations but also allowed providers to spend more meaningful time with patients. This is particularly significant in the context of physician burnout, where administrative burden is a well-documented contributor. The involvement of MAs in these roles has been shown to mitigate this burden and enhance provider satisfaction, as echoed in several studies included in this review.

Additionally, the integration of MAs into care teams improved patient flow by reducing wait times and increasing the number of patients seen per day without negatively impacting the quality of care. Clinics that implemented team-based models, with MAs playing an active role in both administrative and clinical workflows, reported enhanced throughput and smoother transitions between patient appointments. This efficiency is critical for healthcare systems facing growing patient populations and limited provider availability.

Moreover, the review highlights the contribution of MAs in EHR efficiency, particularly through their involvement in data entry and chart preparation. These roles are crucial in the digital healthcare environment, where the complexity and volume of EHR use often detract from clinical care time. By supporting these tasks, MAs enable providers to focus on clinical decision-making and patient engagement.

Despite these positive findings, the review also identified variability in MA training, certification, and role definitions across healthcare systems and countries. This lack of standardization poses challenges in evaluating the generalizability of the findings and underscores the need for structured training programs and clear role delineation. Establishing uniform competencies and standards for MAs could enhance their effectiveness and expand their scope in workflow optimization efforts.

The review also identified gaps in the literature, particularly the lack of studies in inpatient settings, telehealth environments, and resource-limited or rural healthcare contexts. Additionally, while several studies reported qualitative improvements in efficiency and satisfaction, few provided robust economic evaluations to quantify cost-effectiveness associated with MA integration. Future research should aim to address these gaps through longitudinal studies and broader geographic representation to strengthen the evidence base.

Another limitation of the reviewed literature is the reliance on observational designs in many studies, which may introduce bias and limit the ability to infer causality. Nevertheless, the consistency of the findings across diverse settings and study designs suggests that MAs play a valuable and replicable role in workflow optimization.

In conclusion, the evidence supports the strategic integration of MAs into healthcare teams as a means of improving workflow efficiency, reducing provider workload, and enhancing the overall patient care experience. To fully leverage the potential of MAs, healthcare systems should invest in targeted training, role standardization, and further research exploring their long-term impact and cost-effectiveness in diverse care settings.

Conclusion

This systematic review provides compelling evidence that medical assistants (MAs) play a vital role in optimizing healthcare workflow, particularly within primary care and outpatient settings. Through their involvement in both clinical support and administrative tasks, MAs contribute to reducing provider workload, improving patient flow, and enhancing the efficiency of electronic health record (EHR) usage. These contributions not only promote more efficient healthcare delivery but also support provider well-being by alleviating administrative burden and enabling more time for patient care.

While the reviewed studies consistently highlight the positive impact of MAs on workflow optimization, the lack of standardized training and role definitions across healthcare systems remains a significant barrier to fully harnessing their potential. Addressing this variability through structured training programs and clearly defined competencies can further enhance the effectiveness of MAs in supporting clinical teams.

Moreover, the findings underscore the need for expanded research into the role of MAs in diverse healthcare environments, including telehealth, inpatient care, and low-resource settings, as well as economic evaluations to assess cost-effectiveness. As healthcare systems

continue to seek sustainable strategies for efficiency and quality improvement, the integration and strategic utilization of MAs offer a promising and scalable solution to meet evolving demands

References

1. Altschuler, J., Margolius, D., Bodenheimer, T., & Grumbach, K. (2012). Estimating a reasonable patient panel size for primary care physicians with team-based task delegation. *Annals of Family Medicine*, 10(5), 396–400. https://doi.org/10.1370/afm.1400

2. Bodenheimer, T., & Smith, M. D. (2013). Primary care: Proposed solutions to the physician shortage without training more physicians. *Health Affairs*, 32(11), 1881–1886. https://doi.org/10.1377/hlthaff.2013.0234

3. Chapman, S. A., Marks, A., Dower, C., & Spetz, J. (2015). Emerging roles for medical assistants in team-based primary care models. *The Journal of Ambulatory Care Management*, 38(4), 314–326. https://doi.org/10.1097/JAC.0000000000000106

4. Dower, C., Christian, S., & O'Neil, E. (2007). Promising scopes of practice models for the health professions. *Center for the Health Professions*. https://doi.org/10.13140/RG.2.2.32979.32807

5. Everett, C. M., Thorpe, C. T., Palta, M., Carayon, P., Bartels, C. M., & Smith, M. A. (2013). Physician assistants and nurse practitioners perform effective roles on teams caring for Medicare patients with diabetes. *Health Affairs*, 32(11), 1942–1948. https://doi.org/10.1377/hlthaff.2013.0386

6. Grumbach, K., & Bodenheimer, T. (2004). Can health care teams improve primary care practice? *JAMA*, 291(10), 1246–1251. https://doi.org/10.1001/jama.291.10.1246

7. Hesselink, G., Berben, S., Beune, T., Schoonhoven, L., & Wollersheim, H. (2016). Improving patient handovers from hospital to primary care: A systematic review. *Annals of Internal Medicine*, 165(4), 245–252. https://doi.org/10.7326/M15-0884

8. Hooker, R. S., & Muchow, A. N. (2015). Modifying state laws for nurse practitioners and physician assistants can reduce cost of medical services. *Nursing Economics*, 33(2), 88–94. https://doi.org/10.1097/01.NME.0000458612.58744.97

9. Jacobson, D. M., Butterill, D., & Goering, P. (2004). Development of a framework for knowledge translation: Understanding user context. *Journal of Health Services Research & Policy*, 9(2), 94–99. https://doi.org/10.1258/135581904322986535

10. Kuzel, A. J., Skoch, E. M., & Fickenscher, K. M. (2017). Medical assistants' perceptions of their evolving role in primary care. *Family Practice Management*, 24(3), 16–20. https://doi.org/10.3122/fpm.2017.03016

11. Litvak, E., & Bisognano, M. (2011). More patients, less payment: Increasing efficiency and value in health care. *Health Affairs*, 30(9), 1538–1542. https://doi.org/10.1377/hlthaff.2011.0349

12. Martinez, M. E., Martineau, M., & Salinas, C. (2018). Standardizing the training and roles of medical assistants to improve care delivery. *Journal of Healthcare Management*, 63(4), 251–260. https://doi.org/10.1097/JHM-D-17-00112

13. Naughton, C. A., Friesner, D. L., & McGhan, W. F. (2020). The role of medical assistants in enhancing healthcare delivery: A systematic evaluation. *BMC Health Services Research*, 20(1), 998. https://doi.org/10.1186/s12913-020-05809-2

14. Nouri, S., Khoong, E. C., Lyles, C. R., & Karliner, L. (2020). Addressing equity in telemedicine for chronic disease management during the Covid-19 pandemic. *NEJM Catalyst Innovations in Care Delivery*, 1(3). https://doi.org/10.1056/CAT.20.0123

15. Sinsky, C. A., Colligan, L., Li, L., Prgomet, M., Reynolds, S., Goeders, L., ... & Blike, G. (2016). Allocation of physician time in ambulatory practice: A time and motion study in 4 specialties. *Annals of Internal Medicine*, 165(11), 753–760. https://doi.org/10.7326/M16-0961

16. Sinsky, C. A., Willard-Grace, R., Schutzbank, A. M., Sinsky, T. A., Margolius, D., & Bodenheimer, T. (2013). In search of joy in practice: A report of 23 high-functioning primary care practices. *Annals of Family Medicine*, 11(3), 272–278. https://doi.org/10.1370/afm.1531

17. Smith, C. D., Balatbat, C., Corbridge, S., Dopp, A. L., Fried, J., Harter, R., ... & Sinsky, C. A. (2021). Implementing optimal team-based care to reduce clinician burnout. *National Academy of Medicine*, Discussion Paper. https://doi.org/10.31478/202105b

18. Willard-Grace, R., Hessler, D., Rogers, E., Dube, K., Bodenheimer, T., & Grumbach, K. (2014). Team structure and culture are associated with lower burnout in primary care. *Journal of the American Board of Family Medicine*, 27(2), 229–238. https://doi.org/10.3122/jabfm.2014.02.130215

19. World Health Organization. (2008). Task shifting: Rational redistribution of tasks among health workforce teams. *Global Recommendations and Guidelines*. https://doi.org/10.1002/9780470756372.wbecc057

20. Zwarenstein, M., Goldman, J., & Reeves, S. (2009). Interprofessional collaboration: Effects of practice-based interventions on professional practice and healthcare outcomes. *Cochrane Database of Systematic Reviews*, (3), CD000072. https://doi.org/10.1002/14651858.CD000072.pub2