International Journal of Innovative Technologies in Social Science

e-ISSN: 2544-9435

Operating Publisher
SciFormat Publishing Inc.
ISNI: 0000 0005 1449 8214

2734 17 Avenue SW,
Calgary, Alberta, T3E0A7,
Canada
+15878858911
editorial-office@sciformat.ca

ARTICLE TITLE	TELERADIOLOGY AS A TOOL FOR REDUCING DIAGNOSTIC INEQUALITY: LITERATURE REVIEW OF EVIDENCE FROM RESOURCE-CONSTRAINED HEALTHCARE SYSTEMS
DOI	https://doi.org/10.31435/ijitss.2(50).2026.5846
RECEIVED	28 March 2026
ACCEPTED	15 June 2026
PUBLISHED	29 June 2026
LICENSE	The article is licensed under a **Creative Commons Attribution 4.0 International License.**

TELERADIOLOGY AS A TOOL FOR REDUCING DIAGNOSTIC INEQUALITY: LITERATURE REVIEW OF EVIDENCE FROM RESOURCE-CONSTRAINED HEALTHCARE SYSTEMS

Arnold Borowiec *(Corresponding Author, Email: borowiec.arnold@gmail.com)*
Independent Researcher, Poland
ORCID ID: 0009-0008-4236-8694

Natalia Ostruszka
Szpital im. Stefana Żeromskiego w Krakowie, Poland
ORCID ID: 0009-0002-3641-2800

Julia Pilecka
Szpital Praski p.w. Przemienienia Pańskiego, Poland
ORCID ID: 0009-0007-4484-1716

Sabina Kolawa
Medycyna Praktyczna, Poland
ORCID ID: 0009-0004-8847-7037

Jędrzej Wojciechowski
Szpital Praski p.w. Przemienienia Pańskiego, Poland
ORCID ID: 0009-0001-7575-1816

Maria Marusińska
5 Wojskowy Szpital Kliniczny z Polikliniką SP ZOZ w Krakowie, Poland
ORCID ID: 0009-0001-8421-115X

Michał Karpiński
Szpital im. Stefana Żeromskiego w Krakowie, Poland
ORCID ID: 0009-0007-1306-5275

Wiktoria Czyż
Samodzielny Publiczny Zakład Opieki Zdrowotnej w Myślenicach, Poland
ORCID ID: 0009-0006-6675-2389

Wojciech Markiewicz
Szpital Specjalistyczny im. Ludwika Rydygiera w Krakowie, Poland
ORCID ID: 0009-0009-2472-1543

Michał Parzniewski
Szpital Miejski Specjalistyczny im. G. Narutowicza, Poland
ORCID ID: 0009-0006-4209-5564

ABSTRACT

Background: In many regions of the world where healthcare resources are limited, access to radiologists and the infrastructure necessary for diagnostic imaging is significantly restricted. The uneven distribution of resources leads to delayed diagnosis and, as a result, poorer treatment outcomes. In response to these challenges, teleradiology enables the remote transmission and interpretation of imaging studies, which can help reduce disparities in access to diagnostic imaging. Such solutions are particularly significant in rural and hard-to-reach areas. Despite the growing trend in the number and scope of telemedicine system implementations, the effectiveness of teleradiology in the context of systematically reducing diagnostic inequalities requires further analysis.

Methods: A comprehensive PubMed and Cochrane Library search was performed using broad terms not specified to subtypes of medical imaging devices, including cohort studies, systematic reviews and meta-analyses from January 2020 to April 2026. Then, the articles were reviewed manually and selected based on the relevance for the review.

Results: The available evidence suggests that the use of teleradiology and artificial intelligence models, in conjunction with mobile imaging systems, can effectively help address the shortage of radiologists, thereby increasing access to diagnostic imaging in healthcare and strengthening screening programs. It also facilitates multidisciplinary collaboration among specialists, leading to more accurate diagnoses and targeted treatment.

Conclusions: In many low-resource regions, limited access to radiologists and diagnostic imaging infrastructure contributes to delayed diagnoses and poorer treatment outcomes. Teleradiology, by enabling remote image interpretation, may help reduce these disparities, particularly in rural and underserved areas. However, its effectiveness in systematically reducing diagnostic inequalities still requires further evaluation.

KEYWORDS

Teleradiology, Health Care Disparities, Diagnostic Imaging, Low-Resource Settings, Artificial Intelligence, Mobile Imaging Systems, Telemedicine, Radiology Workforce Shortage

CITATION

Arnold Borowiec, Natalia Ostruszka, Julia Pilecka, Sabina Kolawa, Jędrzej Wojciechowski, Maria Marusińska, Michał Karpiński, Wiktoria Czyż, Wojciech Markiewicz, Michał Parzniewski. (2026) Teleradiology as a Tool for Reducing Diagnostic Inequality: Literature Review of Evidence From Resource-Constrained Healthcare Systems. *International Journal of Innovative Technologies in Social Science*. 2(50). doi: 10.31435/ijitss.2(50).2026.5846

1. Introduction

Radiology plays a crucial role in modern clinical medicine, providing essential diagnostic information that significantly contributes to accurate clinical decision-making and improved patient outcomes. Imaging-based diagnostics are often fundamental in disease detection, staging, treatment planning, and monitoring, making radiology an integral component of effective and evidence-based healthcare delivery. Despite its undeniable clinical value, the establishment and maintenance of radiological infrastructure remain resource-intensive. The high costs associated with imaging equipment acquisition, regular servicing and upgrades, as well as the need for highly trained personnel—including radiologic technologists and specialist radiologists—constitute major barriers for many healthcare systems worldwide. These challenges are particularly pronounced in low- and middle-income countries, where limited financial and human resources further exacerbate disparities in access to diagnostic services. Evidence from diverse healthcare settings, including India, Africa, Southeast Asia, and Latin America, suggests that teleradiology can substantially improve access to timely and accurate diagnostic imaging. By enabling remote interpretation of medical images, teleradiology reduces patient waiting times, enhances clinical decision-making, and supports more efficient use of scarce specialist resources (Chandramohan et al., 2023; Pesapane et al., 2023; Crumley et al., 2020; Adams et al., 2022). Ultimately, these improvements contribute to better coordination of care and have the potential to positively influence overall health outcomes, particularly in underserved and resource-limited regions (Iona Crumley et al., 2020; Rudisill et al., 2024; Nigatu et al., 2025). Teleradiology represents a highly effective solution in settings with limited access to radiological services, particularly in regions where local diagnostic capacity is insufficient. It enables the transfer of medical images between healthcare facilities, allowing their interpretation by highly qualified specialists who are often concentrated in large urban and academic centers. This centralization of radiological expertise contributes to secondary shortages of specialist services in rural and remote areas, further deepening existing disparities in access to diagnostic care. The integration of artificial intelligence (AI), mobile imaging units, and public–private partnerships further strengthens the scalability, efficiency, and overall impact of teleradiology in resource-constrained healthcare environments (Chandramohan et al., 2023; Sharma et al., 2025; Diala et al., 2025). These combined approaches facilitate broader service coverage, improve workflow efficiency, and support more rapid diagnostic decision-making.

Overall, although teleradiology demonstrates substantial potential in reducing global inequalities in access to diagnostic imaging, its full implementation and effectiveness depend on overcoming a range of technical, organizational, and regulatory challenges that continue to limit its widespread adoption.

2. Methods

We conducted a comprehensive literature search using PubMed and the Cochrane Library, supplemented by additional databases, covering publications from January 2020 to April 2026. The search strategy employed broad terms not restricted to specific subtypes of medical imaging devices and included cohort studies, systematic reviews, and meta-analyses. Key search concepts focused on disparities in access to diagnostic services, foundational principles of teleradiology and related terminology (e.g., tele-imaging), as well as alternative and complementary digital health solutions such as tele-ultrasound. Particular attention was also given to literature addressing limitations of teleradiology, as well as barriers to and facilitators of its implementation in clinical practice. Following the initial search, articles were screened manually and assessed for relevance to the scope of the review. Additional sources were identified through citation tracking of the primary studies and included when deemed relevant. A multi-phase filtering process incorporating relevance assessment, methodological quality appraisal, citation graph exploration, and expert review was applied. Ultimately, 52 publications were included in this review.

3. Results

3.1 Impact on Diagnostic Access and Equity

Teleradiology has significantly enhanced access to diagnostic imaging services in underserved areas by allowing remote image interpretation in locations where radiological expertise is unavailable (Chandramohan et al., 2023; Rudisill et al., Yemeshev et al., 2025; Pesapane et al., 2023). In regions such as India and Africa, the implementation of teleradiology networks has helped reduce disparities between urban and rural healthcare systems through faster reporting times, with average turnaround times ranging from 2 to 4 hours, while also facilitating large-scale population screening initiatives (Chandramohan et al., 2023; Rudisill et al., 2024; Kalyanpur et al., 2022). Similarly, in Ethiopia and Indonesia, the introduction of web-based teleradiology platforms markedly decreased patient waiting times from more than 40 hours to less than 5 hours—and contributed to higher patient satisfaction (Harahap et al., 2024; Nigatu et al., 2025).

3.2 Clinical Outcomes & Decision-Making

Research conducted in the Democratic Republic of Congo demonstrated that the introduction of computed radiography combined with teleradiology resulted in changes to diagnoses in 62% of patients and modifications to treatment plans in 61%, ultimately improving clinical decision-making and patient management (Crumley et al., 2020). Comparable outcomes have also been documented in Malawi (tuberculosis screening), Peru (tele-ultrasound diagnostics), Mali (national teleradiology network), Ghana and Kenya (mobile teleradiology services), Saudi Arabia (remote MRI interpretation), Germany (enhanced rural healthcare access), Australia (breast cancer evaluation), Canada (remote ultrasound services), China (robotic tele-ultrasound), and India (the Tripura telemedicine model) (Rudisill et al., 2024; Marini et al., 2021; Toscano et al., 2021; Tahir et al., 2022; Marini et al., 2021; Kalyanpur et al., 2022; Ren et al., 2023; Reschke et al., 2025; Johnston et al., 2020).

3.3 Quantitative outcomes of teleradiology in underserved settings

In low-resource and rural settings, teleradiology has consistently improved turnaround times (TAT), supported more accurate diagnostic decision-making, and increased patient satisfaction, often on a large scale.

Clinical impact and diagnostic performance:

● Africa network: 58,223 scans from 39,513 patients in 8 countries; mean TAT 2.46 h (95% CI 2.44–2.48) (Rudisill et al., 2024).

● Tripura, India: 78,622 studies over 3 years from 26 rural centers; mean TAT 3.19 h (95% CI 3.16–3.22) (Kalyanpur et al., 2022).

● Saudi Arabia: 103,730 scans over 10 years; mean TAT 19.48 h (95% CI 19.39–19.56) (Arjuna et al., 2025).

Patient and provider satisfaction:

● Ethiopia: satisfaction median score rose from 96 to 113 (out of 155); % scale mean from 52.6% to 65.7%; GLM showed 11% increase in satisfaction (Nigatu et al., 2025).

● Rural India (Gondia): 81.7% of patients satisfied/very satisfied; 76.7% of physicians said reports directly guided immediate management, 18.3% referral decisions (Turkat et al., 2020).

● North Sumatra: high perceived usefulness and ease of use among 75 providers; TAM scales Cronbach's alpha >0.85 (Harahap et al., 2024).

3.4 Implementation Models & Innovations

Public–private partnerships (PPPs) have played a significant role in expanding teleradiology services across different regions of India by implementing diverse outsourcing strategies. These initiatives have enhanced cost-efficiency, diagnostic precision, patient satisfaction, and the overall sustainability of healthcare delivery systems (Sharma et al., 2025). Moreover, the incorporation of artificial intelligence–based solutions has improved both workflow efficiency and diagnostic performance (Chandramohan et al., 2023; Diala et al., 2025). The use of mobile digital imaging systems and tele-ultrasound technologies has also enabled access to diagnostic services in remote and underserved areas while requiring only limited infrastructure (Adams et al., 2022; Britton et al., 2019).

3.5 Barriers & Facilitators

The main obstacles to successful implementation include inadequate infrastructure, particularly unreliable internet access and electricity supply, shortages of trained personnel and technical support staff, unclear regulations related to data security and patient confidentiality, limited financial resources, and resistance from healthcare professionals and administrators. Additional challenges involve difficulties integrating teleradiology into existing clinical workflows, language and cultural differences, concerns regarding quality assurance, and maintaining long-term sustainability (Chandramohan et al., 2023; Nigatu et al., 2024; Ewing et al., 2022).

Factors that support successful implementation include effective clinical governance and committed leadership, strong collaboration and communication among healthcare teams, reliable technical assistance, intuitive and accessible IT systems, comprehensive training initiatives, and active community involvement. Other important facilitators are centralized consultation hubs, cooperation between the public and private sectors, supportive healthcare policies, incentive systems for radiologists and technicians, and the development of scalable and sustainable operational models (Sharma et al., 2025; Nigatu et al., 2024; Johnston et al., 2020).

4. Discussion

Current evidence strongly indicates that teleradiology is an effective approach for reducing disparities in diagnostic healthcare within resource-limited settings, primarily by increasing access to specialist image interpretation in areas affected by severe radiologist shortages (Chandramohan et al., 2023; Pesapane et al., 2023; Crumley et al., 2020; Adams et al., 2022). Its benefits are particularly significant when integrated with advanced technologies such as artificial intelligence–based diagnostic tools, mobile imaging systems (Chandramohan et al., 2023), or scalable public–private partnership models that improve the allocation of resources across healthcare sectors. In addition, teleradiology promotes multidisciplinary cooperation among healthcare professionals, thereby supporting more comprehensive and patient-centered management of complex conditions, including breast cancer and musculoskeletal disorders (Pesapane et al., 2023; Yemeshev et al., 2025).

Despite these advantages, several important barriers continue to hinder broader implementation. Limited infrastructure, including inadequate internet connectivity and unstable power supplies, restricts scalability and long-term sustainability. Regulatory systems governing data protection and patient confidentiality are often underdeveloped or inconsistently applied. Workforce shortages remain a major concern even with technological support, while quality assurance standards still require refinement, particularly in complicated cases that demand multidisciplinary consultation or real-time specialist input (Chandramohan et al., 2023; Nigatu et al., 2024). Furthermore, insufficiently inclusive implementation strategies may widen existing digital inequalities if issues related to access, training, and technological literacy are not adequately addressed.

The overall quality of available evidence is generally moderate to high for studies evaluating feasibility and short-term effectiveness. However, there is a relative lack of robust long-term outcome studies and randomized controlled trials, underscoring the need for more rigorous and standardized evaluation frameworks in future research.

5. Conclusions

Teleradiology has been widely recognized as an effective approach to narrowing diagnostic disparities by extending access to specialist imaging interpretation in healthcare systems with limited resources. It contributes to more timely and accurate diagnoses, strengthens clinical decision-making, and helps reduce inequities between urban and rural populations. At the same time, its full implementation depends on addressing ongoing challenges related to infrastructure, regulation, and workforce capacity, as well as producing stronger evidence on its long-term clinical and system-level outcomes.

Conflicts of Interest: No conflicts of interest to declare. The authors received no financial support from device manufacturers or related entities in connection with this review.

Acknowledgments: The authors acknowledge the open-access policies of PubMed/MEDLINE, PMC and the journals cited herein, which facilitated comprehensive literature access for this review.

REFERENCES

1. Adams, S., Burbridge, B., Chatterson, L., Babyn, P., & Mendez, I. (2022). A telerobotic ultrasound clinic model of ultrasound service delivery to improve access to imaging in rural and remote communities. *Journal of the American College of Radiology, 19*(1 Pt B), 162–171. https://doi.org/10.1016/j.jacr.2021.07.023
2. Ain, H., Tahir, M., Farooq, F., Eljack, M., & Yousaf, Z. (2023). Teleradiology: Legislations and ethical issues in low- and middle-income countries. *Academic Radiology*. https://doi.org/10.1016/j.acra.2023.02.036
3. Alhasan, M., & Alhasan, A. (2025). Technical requirements and optimization strategies for home-based teleradiology workstations: A review article. *Insights into Imaging, 16*. https://doi.org/10.1186/s13244-025-02081-8
4. Alqarni, M., Alharbi, F., Daghriri, A., Tohari, M., Awaji, M., Gharawi, A., Altukhais, I., Amri, A., Almutairi, F., Alanbari, F., & Alshaibani, M. (2025). Impact of telemedicine and teleradiology on interprofessional collaborative care among nurses, pharmacists, and radiologists: A systematic review. *Saudi Journal of Medicine and Public Health*. https://doi.org/10.64483/jmph-84
5. Alruwaili, A., Alshammari, A., Alsalhi, F., Aldamen, S., & Alamri, H. (2024). Teleradiology in Saudi Arabia: A national survey and retrospective review of associated MRI reports. *BMC Health Services Research, 24*. https://doi.org/10.1186/s12913-024-11706-5
6. Arjuna, S., Mathur, N., Rawath, M., & Kalyanpur, A. (2025). Utilization of teleradiology services for healthcare delivery in Saudi Arabia. *Advances in Radiotherapy & Nuclear Medicine*. https://doi.org/10.36922/arnm025270033
7. Bashshur, R., Krupinski, E., Thrall, J., & Bashshur, N. (2016). The empirical foundations of teleradiology and related applications: A review of the evidence. *Telemedicine and e-Health, 22*, 868–898. https://doi.org/10.1089/tmj.2016.0149
8. Britton, N., Miller, M., Safadi, S., Siegel, A., Levine, A., & McCurdy, M. (2019). Tele-ultrasound in resource-limited settings: A systematic review. *Frontiers in Public Health, 7*. https://doi.org/10.3389/fpubh.2019.00244
9. Chandramohan, A., Krothapalli, V., Augustin, A., Kandagaddala, M., Thomas, H., Sudarsanam, T., Jagirdar, A., Govil, S., & Kalyanpur, A. (2023). Teleradiology and technology innovations in radiology: Status in India and its role in increasing access to primary health care. *The Lancet Regional Health – Southeast Asia, 23*. https://doi.org/10.1016/j.lansea.2023.100195
10. Chikarmane, S., Thimm, E., Plaxco, J., Chung, S., Harvey, J., & Slanetz, P. (2025). Remote diagnostic breast imaging: An implementation guide. *American Journal of Roentgenology*. https://doi.org/10.2214/AJR.25.33537

11. Coulborn, R., Panunzi, I., Spijker, S., Brant, W., Duran, L., Kosack, C., & Murowa, M. (2012). Feasibility of using teleradiology to improve tuberculosis screening and case management in a district hospital in Malawi. *Bulletin of the World Health Organization, 90*(9), 705–711. https://doi.org/10.2471/BLT.11.099473
12. Crumley, I., Halton, J., Greig, J., Kahunga, L., Mwanga, J., Chua, A., & Kosack, C. (2020). The impact of computed radiography and teleradiology on patients' diagnosis and treatment in Mweso, the Democratic Republic of Congo. *PLOS ONE, 15*. https://doi.org/10.1371/journal.pone.0227773
13. Diala, O., Njoku, C., Onwe, I., Onyeibor, C., & Ekanem, C. (2025). Integrating artificial intelligence and data analytics in imaging for early cancer detection: Optimizing workforce efficiency and healthcare resource allocation. *International Journal of Scientific Research Updates*. https://doi.org/10.53430/ijsru.2025.9.1.0026
14. Ewing, B., & Holmes, D. (2022). Evaluation of current and former teleradiology systems in Africa: A review. *Annals of Global Health, 88*. https://doi.org/10.5334/aogh.3711
15. Forkuo, A., Chianumba, E., Mustapha, A., Osamika, D., & Komi, L. (2022). Advances in digital diagnostics and virtual care platforms for primary healthcare delivery in West Africa. *International Journal of Multidisciplinary Research and Growth Evaluation*. https://doi.org/10.54660/.ijmrge.2022.3.1.1034-1047
16. Hanna, T., Steenburg, S., Rosenkrantz, A., Pyatt, R., Duszak, R., & Friedberg, E. (2020). Emerging challenges and opportunities in the evolution of teleradiology. *American Journal of Roentgenology*, 1–6. https://doi.org/10.2214/AJR.20.23007
17. Harahap, V., Purba, J., & Pitriani, P. (2024). The role of tele-radiology technology in supporting health services in remote areas of North Sumatera. *Jurnal Ilmiah Metadata*. https://doi.org/10.47652/metadata.v6i1.865
18. Johnston, K., Smith, D., Preston, R., Evans, R., Carlisle, K., Lengren, J., Naess, H., Phillips, E., Shephard, G., Lydiard, L., Lattimore, D., & Larkins, S. (2020). "From the technology came the idea": Safe implementation and operation of a high-quality teleradiology model increasing access to timely breast cancer assessment services for women in rural Australia. *BMC Health Services Research, 20*. https://doi.org/10.1186/s12913-020-05922-y
19. Kalyanpur, A., Meka, S., Joshi, K., Nair, H., & Mathur, N. (2022). Teleradiology in Tripura: Effectiveness of a telehealth model for the rural health sector. *International Journal of Health Technology and Innovation*. https://doi.org/10.60142/ijhti.v1i02.36
20. Khan, A., Galea, S., & Mendez, I. (2025). Standardizing virtual healthcare deployment: Insights from the implementation of telerobotic ultrasound to bridge healthcare inequities in rural and remote communities across Canada. *Journal of Primary Care & Community Health, 16*. https://doi.org/10.1177/21501319251329314
21. Kumar, P., A., Lionis, C., Andoko, D., Rahman, Z., Anastasaki, M., & Awankem, B. (2025). Evaluation of diagnostic services in rural and remote areas: Bottlenecks, success stories, and solutions. *Journal of Surgical Specialties and Rural Practice*. https://doi.org/10.4103/jssrp.jssrp_8_25
22. Marini, T., Oppenheimer, D., Baran, T., Rubens, D., Dozier, A., Garra, B., Egoavil, M., Quinn, R., Kan, J., Ortega, R., Zhao, Y., Tamayo, L., Carlotto, C., & Castañeda, B. (2021). Testing telediagnostic right upper quadrant abdominal ultrasound in Peru: A new horizon in expanding access to imaging in rural and underserved areas. *PLOS ONE, 16*. https://doi.org/10.1371/journal.pone.0255919
23. Marini, T., Weiss, S., Gupta, A., Zhao, Y., Baran, T., Garra, B., Shafiq, I., Oppenheimer, D., Egoavil, M., Ortega, R., Quinn, R., Kan, J., Dozier, A., Tamayo, L., Carlotto, C., & Castañeda, B. (2021). Testing telediagnostic thyroid ultrasound in Peru: A new horizon in expanding access to imaging in rural and underserved areas. *Journal of Endocrinological Investigation, 44*, 2699–2708. https://doi.org/10.1007/s40618-021-01584-7
24. Marini, T., Oppenheimer, D., Baran, T., Rubens, D., Toscano, M., Drennan, K., Garra, B., Miele, F., Garra, G., Noone, S., Tamayo, L., Carlotto, C., Trujillo, L., Waks, E., Garra, K., Egoavil, M., Berrospi, J., & Castañeda, B. (2020). New ultrasound telediagnostic system for low-resource areas. *Journal of Ultrasound in Medicine, 40*. https://doi.org/10.1002/jum.15420
25. Martadipura, B., & Martadipura, R. (2025). A systematic review of diagnostic radiology access, barriers, and novel interventions in low-income countries. *The International Journal of Medical Science and Health Research*. https://doi.org/10.70070/z08s4k08
26. Monsky, W., Seslar, S., & James, R. (2025). Remote telerobotics in interventional radiology: Development, procedures, and challenges. *Journal of Vascular and Interventional Radiology, 36*(12), 1917–1921.e1. https://doi.org/10.1016/j.jvir.2025.09.011
27. Muñoz, J. (2024). Aproximación a la capacidad instalada de equipos de tomografía computarizada en Colombia. *Revista CIFE: Lecturas de Economía Social*. https://doi.org/10.15332/22484914.10545
28. Murali, S., Ding, H., Adedeji, F., Qin, C., Obungoloch, J., Asllani, I., Anazodo, U., Ntusi, N., Mammen, R., Niendorf, T., & Adeleke, S. (2023). Bringing MRI to low- and middle-income countries: Directions, challenges, and potential solutions. *NMR in Biomedicine, 37*. https://doi.org/10.1002/nbm.4992
29. Nigatu, A., Yilma, T., Gezie, L., Gebrewold, Y., Gullslett, M., Mengiste, S., & Tilahun, B. (2025). Effect of teleradiology on patient waiting time and service satisfaction in public hospitals, Northwest Ethiopia: A quasi-experimental study. *BMC Health Services Research, 25*. https://doi.org/10.1186/s12913-025-12545-8
30. Nigatu, A., Yilma, T., Gezie, L., Gebrewold, Y., Gullslett, M., Mengiste, S., & Tilahun, B. (2024). Barriers and facilitators experienced during the implementation of a web-based teleradiology system in public hospitals of Northwest Ethiopia: An interpretive description study. *International Journal of Telemedicine and Applications, 2024*. https://doi.org/10.1155/2024/5578056

31. Nortey, J., Osei, E., Suleiman, R., Agbotsigah, L., Adabo, A., & Gborgblah, M. (2023). *Review of teleradiology applications in some selected African countries* [Preprint]. medRxiv. https://doi.org/10.1101/2023.10.07.23296691
32. Osonuga, A., Osonuga, A., Fidelis, S., Osonuga, G., Juckes, J., & Olawade, D. (2025). Bridging the digital divide: Artificial intelligence as a catalyst for health equity in primary care settings. *International Journal of Medical Informatics, 204*, 106051. https://doi.org/10.1016/j.ijmedinf.2025.106051
33. Palozzi, G., Schettini, I., & Chirico, A. (2020). Enhancing the sustainable goal of access to healthcare: Findings from a literature review on telemedicine employment in rural areas. *Sustainability*. https://doi.org/10.3390/su12083318
34. Perez, K., Wisniewski, D., Arı, A., Lee, K., Lieneck, C., & Ramamonjiarivelo, Z. (2025). Investigation into application of AI and telemedicine in rural communities: A systematic literature review. *Healthcare, 13*. https://doi.org/10.3390/healthcare13030324
35. Pesapane, F., Tantrige, P., Rotili, A., Nicosia, L., Penco, S., Bozzini, A., Raimondi, S., Corso, G., Grasso, R., Pravettoni, G., Gandini, S., & Cassano, E. (2023). Disparities in breast cancer diagnostics: How radiologists can level the inequalities. *Cancers, 16*. https://doi.org/10.3390/cancers16010130
36. Rackimuthu, S., Hasan, M., Ray, I., Sahito, A., Chawla, P., & Ghosh, D. (2022). Teleradiology in India during the COVID-19 pandemic: Merits, pitfalls, and a future perspective. *Health Policy and Planning*. https://doi.org/10.1093/heapol/czac045
37. Rao, P., Mathur, N., & Kalyanpur, A. (2023). Utilization of teleradiology by intensive care units: A cohort study. *Indian Journal of Critical Care Medicine, 28*, 20–25. https://doi.org/10.5005/jp-journals-10071-24593
38. Ren, J., Lei, Y., Lei, B., Peng, Y., Pan, X., Ye, H., & Cui, X. (2023). The feasibility and satisfaction study of a 5G-based robotic teleultrasound diagnostic system in health check-ups. *Frontiers in Public Health, 11*. https://doi.org/10.3389/fpubh.2023.1149964
39. Reschke, P., Gruenewald, L., Koch, V., Gotta, J., Booz, C., Mahmoudi, S., Bernatz, S., Gökduman, A., Höhne, E., Eichler, K., Schlüchtermann, J., Vogl, T., & Yel, I. (2025). Radiology access in rural Germany: A nationwide survey on outpatient imaging and teleradiology. *Diagnostics, 15*. https://doi.org/10.3390/diagnostics15080962
40. Rosenkrantz, A., Hanna, T., Steenburg, S., Tarrant, M., Pyatt, R., & Friedberg, E. (2019). The current state of teleradiology across the United States: A national survey of radiologists' habits, attitudes, and perceptions on teleradiology practice. *Journal of the American College of Radiology*. https://doi.org/10.1016/j.jacr.2019.05.053
41. Rudisill, K., Mathur, N., & Kalyanpur, A. (2024). A teleradiology network for the improvement of healthcare and patient management in the developing countries of the African continent. *Clinical Imaging, 111*, 110188. https://doi.org/10.1016/j.clinimag.2024.110188
42. Samuels-Kalow, M., Jaffe, T., & Zachrison, K. (2021). Digital disparities: Designing telemedicine systems with a health equity aim. *Emergency Medicine Journal, 38*, 474–476. https://doi.org/10.1136/emermed-2020-210896
43. Sangare, M., Tanner, L., Voss, S., Laureys, F., Hollow, D., & Toure, M. (2015). A national teleradiology programme in Mali: Implementation and results. *Journal of Telemedicine and Telecare, 21*, 131–138. https://doi.org/10.1177/1357633X15569966
44. Sharma, A., Choudhury, R., & Shahi, A. (2025). OP25 teleradiology public-private partnership models: Informing health technology assessment findings in India. *International Journal of Technology Assessment in Health Care, 41*, S12–S12. https://doi.org/10.1017/S0266462325100834
45. Suji, T., Sullivan, R., & Bowsher, G. (2024). Radiology in conflict: Scoping review. *Conflict and Health, 18*. https://doi.org/10.1186/s13031-023-00550-9
46. Tahir, M., Mars, M., & Scott, R. (2022). A review of teleradiology in Africa—Towards mobile teleradiology in Nigeria. *SA Journal of Radiology, 26*. https://doi.org/10.4102/sajr.v26i1.2257
47. Toscano, M., Marini, T., Drennan, K., Baran, T., Kan, J., Garra, B., Dozier, A., Ortega, R., Quinn, R., Zhao, Y., Egoavil, M., Tamayo, L., Carlotto, C., & Castañeda, B. (2021). Testing telediagnostic obstetric ultrasound in Peru: A new horizon in expanding access to prenatal ultrasound. *BMC Pregnancy and Childbirth, 21*. https://doi.org/10.1186/s12884-021-03720-w
48. Tran, A., Grant, G., Akande, O., & Sadigh, G. (2025). Disparities in imaging and management of multiple sclerosis: A review. *The British Journal of Radiology*. https://doi.org/10.1093/bjr/tqaf233
49. Turkar, G., & Bagdey, P. (2020). Role of utilization of teleradiology services in rural India: A cross-sectional study. *Journal of Population Therapeutics and Clinical Pharmacology*. https://doi.org/10.53555/7bvgfq15
50. Unanah, O., & Mbanugo, O. (2025). Telemedicine and mobile health imaging technologies: Business models for expanding U.S. healthcare access. *International Journal of Science and Research Archive*. https://doi.org/10.30574/ijsra.2025.14.2.0398
51. Yemeshev, Y., Nurmashev, B., Zimba, O., & Koçyiğit, B. (2025). Clinical implications of teleradiology in rheumatic and musculoskeletal diseases: Improving rheumatic care. *Rheumatology International, 45*. https://doi.org/10.1007/s00296-025-05810-w
52. Zhou, Y., Guo, L., Bo, X., Sun, L., Zhang, Y., Chai, H., Ye, R., Peng, C., Qin, C., & Xu, H. (2023). Tele-mentored handheld ultrasound system for general practitioners: A prospective, descriptive study in remote and rural communities. *Diagnostics, 13*. https://doi.org/10.3390/diagnostics13182932