Misdiagnosis in Medicine

Published: March 10, 2025

Source: mariresearch.com

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Introduction

Misdiagnosis is a critical issue in healthcare, contributing to nearly 800,000 cases of permanent disability or death each year across clinical settings (Harris, 2023). These errors can result in delayed or inappropriate treatment, negatively impacting patient outcomes and compromising the quality of care (Newman-Toker et al., 2024). Recognizing the need for greater diagnostic accuracy, Dr. Pooya Beigi, a dermatologist and founder of the Misdiagnosis Association and Research Institute (MARI), is dedicated to investigating the causes of misdiagnosis and developing strategies to improve diagnostic reliability in clinical practice (Blissy, 2024).

Understanding Medical Misdiagnosis

Misdiagnosis occurs when a medical condition is incorrectly identified, leading to a delayed, inaccurate, or completely missed diagnosis (Singh et al., 2017). A survey of primary care physicians identified cancer, pulmonary embolism, and coronary artery disease as some of the most frequently misdiagnosed conditions (Singh et al., 2017). In dermatology, Dr. Beigi emphasizes that skin cancer is one of the most commonly overlooked diagnoses, particularly when signs such as moles appear in areas that are difficult to see or monitor (Blissy, 2024). Additionally, inflammatory skin conditions, including eczema and hives, are often mistaken for minor irritations, leading to delays in seeking medical care (Blissy, 2024). Many patients attempt self-treatment with over-the-counter remedies, which may provide temporary symptom relief but can obscure underlying malignancies, consequently postponing accurate diagnosis and timely intervention (Blissy, 2024).

One of the primary causes of misdiagnosis in medicine is availability bias, where physicians rely on mental shortcuts or heuristics, rather than systematic reasoning (Li et al., 2020). While heuristics can speed up decision-making, they also increase the risk of cognitive errors (Li et al., 2020). Research shows that cognitive factors contribute to 96% of diagnostic mistakes, usually due to overconfidence, failure to collaborate with other healthcare professionals and specialists, or misinterpretation of the patient's initial presentation and non-verbal cues (Pelaccia et al., 2020). Another contributing factor is flawed differential diagnosis, where physicians commit to a single diagnosis without fully considering alternative possibilities (Blissy, 2024).

Despite these cognitive biases and diagnostic pitfalls, historically, many in the medical field have been hesitant to acknowledge the term "misdiagnosis," fearing it implies incompetence and error in clinical judgment (Blissy, 2024). When Dr. Beigi founded MARI, he aimed to change this perception by highlighting that diagnostic errors can occur at any stage, from the initial patient consultation to treatment decisions (Blissy, 2024). According to him, failures in the diagnostic process can stem from incomplete or inaccurate patient histories and errors in data entry or patient documentation (Blissy, 2024). Mistakes in treatment and medication can further exacerbate these issues, including incorrect drug preparation at pharmacies and patient non-adherence to prescribed regimens, such as taking the wrong dosage or mistakenly using a family member's medication (Blissy, 2024). Delays in seeking medical care, whether due to busy schedules or underestimating symptoms, can also contribute to diagnostic errors (Blissy, 2024). Beyond individual errors, it is important to note that systemic challenges, such as limited access to specialists, particularly in fields like dermatology, as well as financial barriers and fear of medical visits can serve as barriers to proper diagnosis and effective care (Blissy, 2024).

Consequences of Misdiagnosis

Medical misdiagnosis has severe consequences that can impact patient health, healthcare systems, and public trust in medical institutions. Delayed or incorrect diagnoses can lead to inappropriate treatments, worsening of the underlying condition, and, in some cases, irreversible harm or death (Balogh et al., 2019). Misdiagnosis is a major contributor to morbidity and mortality, with patients suffering from preventable complications due to missed or incorrect diagnoses (Harris, 2023). Additionally, prolonged diagnostic uncertainty can result in delayed care, reducing the effectiveness of treatment and increasing healthcare costs (Balogh et al., 2019). Beyond clinical outcomes, misdiagnosis erodes patient trust in the healthcare system, leading to reluctance to seek medical attention and reduced adherence to future treatments (Suzuki et al., 2022). On a broader scale, diagnostic errors place a strain on healthcare resources, as mismanaged cases usually require additional interventions, prolonged hospital stays, or costly litigation (Balogh et al., 2019).

Strategies to Reduce Misdiagnosis

Reducing clinical misdiagnosis requires a deliberate and systematic approach to decision-making. Physicians should generate multiple diagnostic hypotheses rather than settling on a single conclusion (Pelaccia et al., 2020). Challenging initial assumptions by asking questions that contradict rather than confirm a diagnosis can help reduce cognitive biases (Pelaccia et al., 2020). Taking additional time for assessment can also allow for thorough hypothesis testing and minimize rushed judgments, while complementing this approach with decision-aid tools can further improve diagnostic accuracy (Pelaccia et al., 2020). Additionally, fostering empathic communication can improve patient engagement and the quality of information gathered (Pelaccia et al., 2020). According to Dr. Beigi, patients play a vital role in improving diagnosis by

providing a detailed timeline of symptoms and sharing key information, such as medication history, dietary changes, environmental exposures, and recent relocations (Blissy, 2024). Telemedicine offers another effective strategy by increasing early access to physicians and specialists, particularly in dermatology, where remote assessments can facilitate timely intervention (Blissy, 2024). Furthermore, choosing the right healthcare provider is essential for accurate diagnosis and treatment (Blissy, 2024). Patients should distinguish between medical and cosmetic dermatologists, seek referrals when necessary, and conduct thorough research before selecting a specialist (Blissy, 2024). Implementing these strategies can help mitigate diagnostic errors, improve patient outcomes, and improve overall healthcare efficiency.

Conclusion

Medical misdiagnosis is a pervasive issue with serious consequences, including delayed treatment, worsened patient outcomes, and loss of trust in healthcare systems. Contributing factors range from cognitive biases and flawed differential diagnoses to systemic barriers that limit access to timely and accurate care. Addressing this issue requires a comprehensive approach that includes improving diagnostic guidelines, fostering interdisciplinary collaboration, expanding access to telemedicine, and increasing patient awareness and engagement in their own care. Dr. Beigi and MARI are at the forefront of this effort, emphasizing the need for continued research and systemic improvements to reduce diagnostic errors. Future efforts should focus on advancing diagnostic technologies, refining medical training to minimize cognitive biases, and ensuring equitable access to specialized care. Strengthening these initiatives is essential to improving diagnostic accuracy and enhancing patient safety in medical practice.

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Provided and edited by the members of MARI Research, Error in Medicine Foundation and MISMEDICINE Research Institute, including Rojina Nariman, Helia Falahatkar and Dr. Pooya Beigi MD. MSc.