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Editorial

POSTCOVID-19 WAR Era, Cancer Diagnostics Problems, Dual Risk Profiling Yes or No?

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Cancer and cancerogenic processes are the second cause of increased morbidity and mortality rates pre- and POSTCOVID-19 pandemic attacks periods, although in some countries Alzheimer/Dementia mortality rates (!) have increased, however, worldwide. On the other hand, cancer mortality statistics for 2025 are not yet fully compiled, but global trends show a growing burden, with lung and breast cancer being major causes of death globally. The World Health Organization (WHO) indicates that in 2024, 685,000 deaths were attributed to breast cancer and 1.80 million to lung cancer. [1-4] In the last decades, different updates and upgrades over oncologic approaches indicated that different cancer types still have no standard Prognostics and Diagnostics Algorithm and Guidelines (PDAGs), remarkably. Subsequently, still 5-and 10-year survival chances of different cancer patients did not increase significantly compared to a decade(s) ago. There are significant gaps between PDAG and an appropriate Medicare and Medicaid, consecutively. How? Why? Which (re)action mechanism is(are) behind such big gaps is not completely elucidated yet.

What is known?

Although in the last Centuries some cancers got more attention and early diagnosis succeeded in increasing survival chance of affected patients, but missing of know-how over a uniformly golden standard PDAG caused that still there is no standard one available, worldwide. Obviously, the success chance is accounting for investments and not systematic working to build up a standard PDAG, globally. For example, the domain of advanced breast cancer treatment is swiftly transforming, providing renewed optimism to patients globally since 2025. Moreover, different advancements in precision medicine, certain targeted therapies, developed immunotherapy, and modern CellTherapy have equipped the hemato-oncologists, and oncologists with an unprecedented array of modern tools to customize PDAG, Medicare, and Medicaid to enhance survival rates [5], although they could not increase it more than 10 years. New antibody-drug combinations, advanced CAR T-cell treatments, and AI-supported decision-making are changing previously untreatable conditions into ones that can be managed [5], although still issue of 10-year survival chances is still not completely solved. While cancer 5- and 10-year survival rates continue to improve in the 21st Century, some common cancers are being detected with increased frequency. There were nearly 2 million new cancer diagnoses in 2022 in the US, which spends $43B on screening each year. The timing of diagnosis is critical for some of the most common cancers, including prostate, colon, breast, cervical, and lung. The reality, however, is that getting an accurate, timely diagnosis can be an uphill battle that takes multiple rounds of testing. As the frequency of late-stage cancer diagnoses rises, clinicians need more accurate and efficient screening methods to address overspending and improve early detection outcomes. Threading the needle between detection and overdiagnosis. Cancer screening is a critical public health measure that can help reverse the trend of late-stage cancer diagnoses and reduce cancer mortality rates. Cancer caught in later stages is more expensive to treat and more likely to be fatal. Early-stage (stage 1) lung cancer costs a median of $25,000 to treat and has a five-year survival rate of 56 percent. In comparison, late-stage (stage 4) lung cancer costs almost 10 times as much ($210,000) to treat and has a five-year survival rate of 5 percent.

What is unknown?

It is more than obvious that, still (August 2025), nobody has a Golden answer to the sincere question "How can every random cancer have a standard PDAG screening and checkups? Further-

more, how could cancer PDAG checkups be updated from 2026? It is noteworthy that there is a growing concern that many people have no access to modern PDAGs. Simultaneously, it became the main goal of different research scientists, oncologists, hemato-oncologists who are missing a uniform golden PDAG to set one in their practice. On the other hand, another sincere question that remained unanswered is tapping into a crucial 10-year survival issue, which, still in 2025, has accounted for both promising advances and persistent gaps in cancer diagnostics. Besides, breakdown of what's happening and which aspects of the death triangle machinery remained unanswered, indicating that, for instance, some updates are properly working and some still not, i.e., certain key updates in cancer diagnostics dual risk profiling CVDs (August-2025). Precision Medicine on the Rise. Tools like DeepHRD, an AI-based diagnostic system, are revolutionizing how we detect genetic markers in tumors. It's reportedly up to 3x more accurate than older genomic tests and has a negligible failure rate, compared to the 20–30% failure rate of standard methods, but they are still failing to help prolong the 10-year survival chance. Next-Generation Sequencing (NGS) widely adopted in 2025, NGS allows for more personalized screening by analyzing a patient's DNA and identifying actionable mutations. Although, this system helps tailor treatments and improves early detection, but still has its own deficiencies, eventually.

Certain improved imaging and biomarker analysis with new imaging techniques, and blood-based biomarkers are helping detect cancers like lung and pancreatic cancer earlier than ever before. These methods are less invasive and are more precise, but all the abovementioned tools and techniques still failed to prolong the 10-year survival of cancer patients, remarkably. What's still missing and/or is problematic, lacking a golden standard PDAG. On the other hand, late-stage diagnoses are still common globally, despite technological advances. Of course, many cancers-especially lung, colon, and breast-are still being diagnosed too late (2025). This leads to higher treatment costs and lower survival rates worldwide. Besides, overdiagnosis concerns some prognostic and diagnostic screening tests that oddly detect indolent or benign conditions that may never progress metastatically. Overdiagnosis bias-based activities can lead to unnecessary treatments and anxiety among patients and their families. Furthermore, access disparities for High-tech diagnostics are often limited to wealthier regions globally. Low- and middle-income people/countries still struggle with basic screening access, remarkably. The diagnostic clarity of many so-called standard tests lacks disease-specific precision, making it hard for clinicians to interpret results confidently. How recently developed clinical indications, chronic pain, and cancerogenic cells progressions (co-)relate to sudden death are very essential now, for any random medical clinician, to make Medicare and Medicaid plans appropriately in a personalized manner, in these post-COVID-19 periods [4].

It is encouraging that certain updates reveal that insightful trends over key correlations between cancerogenic processes and different cardiovascular diseases (CVDs), might help boost 10-year survival, simultaneously. Dual PDAGs management might be implementable as follows: A) Manage centralized shared risk factors for certain gender/ age groups affected with the same death triangle machinery, who share the same CVDs with the same major risk factors: smoking, obesity, diabetes, hypertension, and inflammation. These overlapping conditions increase the likelihood of sudden cardiac arrest events, especially in cancer patients undergoing treatment. B) Cardio-Oncology Emergence The field of cardio-oncology has grown rapidly. Many cancer therapies-especially chemotherapy and immunotherapy-can damage the heart, leading to arrhythmias, heart failure, or sudden cardiac death. This has prompted routine cardiac monitoring in oncology protocols. C) Sudden Death in Cancer Patients. Studies show that up to 20% of cancer-related deaths are sudden and cardiac in nature. This is especially true for patients with lung, breast, and hematologic cancers, where treatment-induced cardiotoxicity is high. D) CAD and CVD as Silent Killers According to the American Heart Association's 2025 report, someone dies of cardiovascular disease every 34 seconds in the U.S., and CVD kills more people than all cancers and accidents combined. CAD remains the leading cause of sudden death globally. (refs) Exaggerated overdiagnosis and cancer staging toward extra checkups are causing extra costs for different people, especially patients and their families' access to Medicare and Medicaid. My research and development team, BBADVIES and RESEARCH [4], during the last 15 years, introduced different model systems to unravel how? Which action mechanism might affect pathophysiological processes underlying CAD, CVDs, and cancerogenic processes in *ex vivo* and *in vivo*?

Taken together, to get one standard PDAG, with an appropriate screening test still there are still significant gaps between diagnostics and 10-year survival chance enhancement. To revise and unravel better and faster PDAGs, one is suggesting trying to centralize a common understanding of the ABC of prognostics/ diagnostics that are associated with sudden death risks, i.e., better integrated screening checkups. In the industrialized countries, different hospitals are using a dual-risk profiling for cancerogenic and heart disease, simultaneously, especially in older adults. Using modern AI-powered diagnostics, machine learning models are also being

used to predict sudden death (triangle machinery activation) risk by analyzing electrocardiograms, simultaneously with cancer imaging, and associated genomic data. The next generation preventive cardio-oncology is now forming a front with administering cardioprotective drugs during cancer treatment, to reduce sudden death risk, however. Of course, personalized medicine approaches often could be reconsidered to adapt and manage certain pharmacotoxicological side effects.

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