

PHILIPS

Clinical Informatics
Positioning Paper

Philips integrated prostate cancer care:

**efficiency, accuracy and confidence
at every stage**



Executive summary

Prostate cancer is a prevalent disease with a complex diagnostic pathway, contributing to increasing clinical and financial strain on hospitals. Variability in imaging, biopsy, and pathology can lead to overstaging or understaging, resulting in unnecessary treatments, missed aggressive disease, operational inefficiencies, and increased cost of care. Philips delivers an integrated solution across radiology, urology, and pathology.

DynaCAD Prostate with Quibim AI-powered^{*,4,10} automation improves radiology workflow efficiencies, while UroNav enables MRI-ultrasound fusion-guided biopsy. Philips IntelliSite Pathology Solution with IBEX AI⁹ further enhances diagnostic consistency and scalability. By integrating data within DynaCAD Urology, clinicians gain a unified patient view to support diagnosis and personalized treatment selection, while the same UroNav image-guided technology enables planning and guidance of personalized, focal therapy. By streamlining workflows, Philips helps hospitals deliver higher-quality prostate cancer care.

The prostate cancer challenge: a prevalent disease with a complex diagnostic pathway

Prostate cancer is among the most diagnosed cancers in men, affecting approximately one in eight men during their lifetime.¹ As populations age, hospitals can expect prostate cancer case volumes to increase steadily, placing growing pressure on radiology, urology, pathology, and oncology services. At the same time, prostate cancer is not a single disease but a broad spectrum of conditions with widely varying clinical behavior.

Diagnosing prostate cancer is not always straightforward. The key challenge lies in accurately distinguishing between slow-growing cancers that may never cause harm and more aggressive forms of the disease that require timely treatment, ensuring that patients receive the right treatment at the right time. Hospitals must support care pathways capable of identifying aggressive disease early while avoiding unnecessary intervention in patients with low-risk cancer. When this balance is not achieved, patient outcomes could suffer and healthcare resources are used inefficiently.

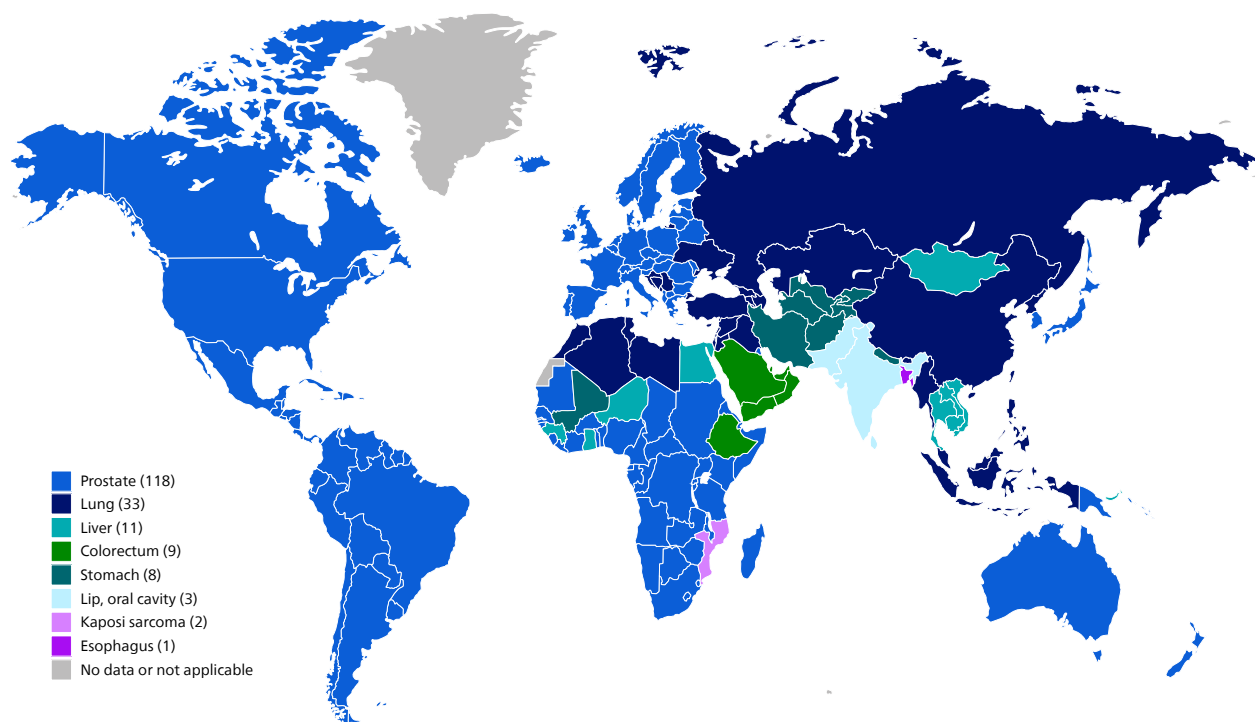


Figure 1: The distribution of cancer cases in men in countries across the world. Prostate cancer is more widely spread (leading diagnoses in 118 purple countries) than other types of cancer for men. Although worldwide more men are diagnosed with lung cancer than prostate cancer, lung cancer dominates diagnoses in fewer countries (33 blue countries) than prostate cancer.¹

Males

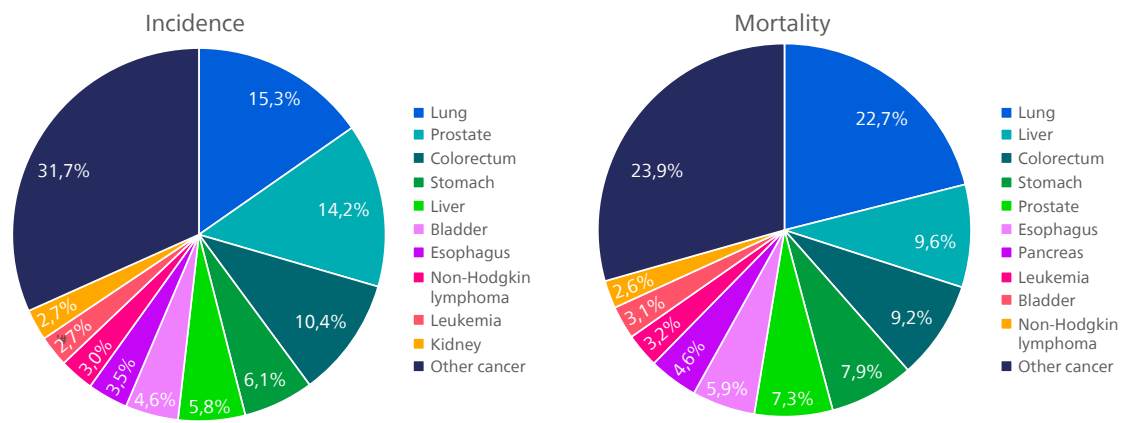


Figure 2: These pie charts show the types of cancer that men are most often diagnosed with (incidence) and the types they're most likely to die from (mortality).¹

Overstaging and understaging

Despite advances in radiology and pathology, diagnostic variability remains a significant challenge in prostate cancer care. Understaging can delay or limit treatment of aggressive disease, leading to progression of the disease, higher downstream costs, and poorer patient outcomes.² Overstaging can drive unnecessary radical treatments, exposing patients to avoidable side effects and increasing long-term cost of care.² Conventional diagnostic pathways may miss clinically significant cancers, particularly when relying on systematic biopsy approaches that sample only a small portion of the prostate. At the same time, increasing sensitivity in screening and imaging has contributed to over-detection of indolent disease. For hospitals, these diagnostic inefficiencies may translate into inconsistent outcomes, operational strain, and avoidable expenses.

Under- and overtreatment: clinical, patient, and financial impact

Treating low-risk or clinically insignificant prostate cancer with radical therapies such as surgery or radiotherapy can result in urinary incontinence, erectile dysfunction, and bowel complications.² These side effects frequently have a lasting impact on patient quality of life and often require long-term clinical management. From a hospital perspective, overtreatment increases lifetime cost of care and negatively affects patient satisfaction and reported outcomes.

Conversely, missed or undertreated aggressive prostate cancer can progress to advanced or metastatic disease, requiring more complex, expensive, and less effective therapies. Patients experience reduced survival and diminished quality of life, while hospitals face significantly higher resource utilization and costs compared to early, appropriately targeted treatment.

The hidden cost of negative biopsies

Standard systematic prostate biopsies often yield negative results, confirming no cancer is present. These procedures place a significant burden on urology services and pathology departments, consuming procedure room capacity, clinician and staff time, diagnostic resources and follow-up consultations without delivering clinical benefit.³ Patients experience discomfort, infection risk and anxiety, while hospitals absorb the cost of a high volume of low-yield procedures. At scale, unnecessary biopsies represent a substantial and often underrecognized financial and operational burden, particularly for pathology departments and laboratories that are already overburdened and facing workforce shortages.³

Improving diagnostic efficiency and confidence across radiology, urology and pathology

Philips DynaCAD Prostate and UroNav supports hospitals to improve prostate cancer diagnostics while simultaneously automating workflows and reducing inefficiencies across the care pathway. DynaCAD Prostate, enhanced by Quibim QP-Prostate,⁴ automates key components of prostate MRI interpretation enabling automated prostate and lesion segmentation, lesion characterization, and significantly reducing the manual workload for radiologists. The use of AI-powered segmentation and analysis may improve consistency and reproducibility in prostate MRI interpretation, reduces inter-reader variability, and shortens reporting times. Radiology departments are therefore better equipped to manage increasing imaging volumes without adding staff, supporting scalability and cost control. For hospitals, this results in faster turnaround times, more predictable workflows and improved utilization of highly specialized radiology resources. In addition, DynaCAD Prostate enables PI-RADS-based templated reporting, standardizing communication between radiology and urology.

UroNav builds on this foundation by enabling MRI-ultrasound fusion-guided biopsy. This targeted approach allows clinicians to precisely sample lesions identified and characterized on the diagnostic multi-parametric MR images, rather than relying on random systematic sampling. As a result, hospitals achieve 30% higher detection rates of clinically significant cancer, reduced detection of insignificant disease, fewer biopsy cores, and lower rates of repeat and negative biopsies.⁵ Together, DynaCAD Prostate and UroNav support a more accurate, efficient, and value-driven pathway.

The tissue samples are subsequently processed and analyzed by the pathologist to establish a definitive diagnosis. Pathology remains the definitive step in prostate cancer diagnosis, yet pathology departments face increasing pressure from rising case volumes and workforce constraints. Philips IntelliSite Pathology Solution addresses these challenges by enabling fully digital workflows that support remote reading, improved collaboration, and more efficient workload distribution and pathology reading, helping departments maintain or even shorten turnaround times while scaling services. The transition from analog to digital pathology alone has been shown to deliver efficiency gains of approximately 15–25%,⁶ while the addition of advanced AI tools can further enhance productivity. Ibex AI⁹ contextual launch further strengthens diagnostic performance by augmenting the pathologist's expertise.⁷ By identifying areas suspicious for cancer, supporting Gleason grading, and providing quantitative insights, Ibex AI improves consistency and reduces inter-observer variability,⁷ with overall efficiency gains reported of up to 37%.⁸ Together, Philips digital pathology and Ibex AI⁹ allow hospitals to deliver confident, timely diagnoses^{7,8} while making more efficient use of specialized pathology resources.



From integrated data to targeted therapy: enabling treatment selection, planning, and guidance

By integrating radiology, urology, and pathology data within DynaCAD Urology, clinicians gain a unified view of each patient’s case, supporting personalized treatment decisions. This comprehensive insight enables care teams to select the most appropriate approach – whether active surveillance, focal therapy, or more extensive intervention.

For appropriately selected patients with localized, clinically significant prostate cancer, focal therapy represents an important evolution in treatment strategy. Rather than treating the entire prostate gland, focal therapy targets only cancerous tissue, preserving healthy structures whenever possible.

DynaCAD Urology and UroNav enable personalized and precise planning and guidance of focal therapy using the same image-guided targeting principles applied in biopsy procedures. This precision allows clinicians to effectively treat cancer while minimizing damage to surrounding tissue. Patients benefit from fewer side effects, shorter recovery times, and better preservation of urinary and sexual function. For hospitals, focal therapy can shorten length of stay helping reduce associated inpatient costs, lower complication-related expenses, and enhance patient satisfaction, while expanding differentiated treatment offerings.

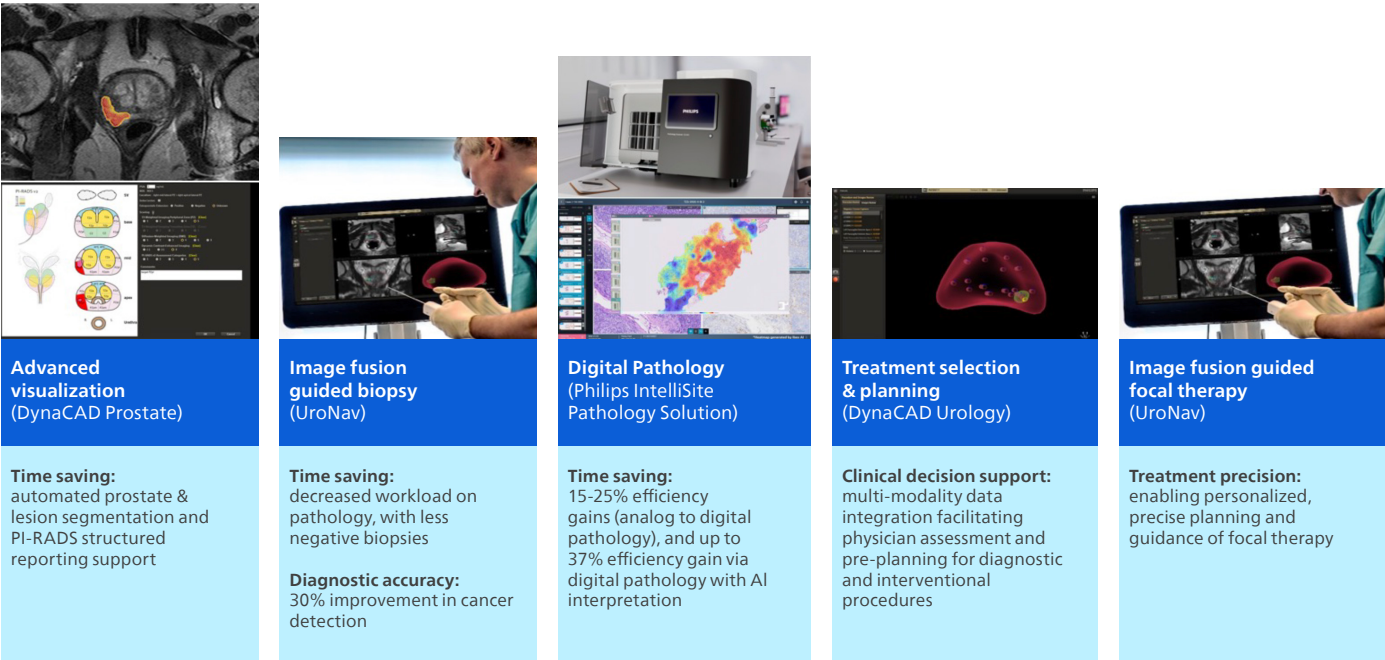


Figure 3: A comprehensive overview of Philips’ integrated prostate cancer solution and the value it delivers

Philips’ unique position and capabilities across the prostate cancer care continuum

Philips is uniquely positioned to support prostate cancer care across the full continuum. This integrated approach matters because it connects critical clinical data and workflows across specialties, enabling greater diagnostic efficiency and confidence, more precise treatment, and improved outcomes for both patients and healthcare providers.

Advancing value-based prostate cancer care

As healthcare systems continue their shift toward value-based care, prostate cancer represents a critical opportunity to improve outcomes while controlling costs. Precision diagnostics, AI-enabled workflow automation, and targeted therapies allow hospitals to move beyond one-size-fits-all approaches toward more efficient and personalized care models. Through its integrated prostate cancer portfolio, Philips empowers hospitals to detect the right cancer, treat the right patient, avoid unnecessary procedures, improve quality of life, and sustainably manage cost across the continuum of care. This is not only a technology investment, but a strategic step toward smarter, more resilient prostate cancer care.

References

- 1 <https://www.cancer.org/research/acs-research-news/prostate-cancer-is-number-1-for-118-countries-worldwide.html>
- 2 <https://doi.org/10.3390/diseases13060167>
- 3 <https://doi.org/10.1016/j.jval.2021.07.002>
- 4 <https://quibim.com/qp-prostate/>
- 5 Siddiqui MM, et al. Comparison of MR/ultrasound fusion-guided biopsy with ultrasound-guided biopsy for the diagnosis of prostate cancer. JAMA. 2015;313(4):390-397
- 6 KLAS Research 'US Digital Pathology 2023' Performance Insights
- 7 Information of Ibex AI. <https://ibex-ai.com/resource/prostate-cancer-ai-pathologist-used-to-help-diagnosis/>
- 8 Information provided by Ibex AI: Raoux, et al. Modern Pathology (2021) 34 (suppl 2): 598-599. <https://www.youtube.com/watch?v=9XuWK8PmUlw>
- 9 Ibex AI is Research Use Only in the United States
- 10 Quibim QP-Prostate is only available in USA

* Prostate segmentations, ROIs and associated suspicion levels imported from third-party applications are not generated, verified, or validated by Philips DynaCAD. The radiologist must review these results, adjust as needed prior to acceptance, and determine the PI-RADS assessment and final interpretation.

