

# IARC Impact in practice series

## The Portugal experience



**"Portugal's research community has long aspired to become a member of IARC, and we have now achieved this."**

**Dr Hugo Soares, Agency for Clinical Research and Biomedical Innovation (AICIB)**

Portugal joins IARC as a Participating State in 2025 **not at the start of a relationship, but at a moment when collaboration is already dense, visible and strategically useful.** Over the past decade, Portuguese researchers, registries and cancer centres have been embedded in IARC-linked consortia, European Joint Actions and international standard-setting work. Membership now gives Portugal a formal voice in IARC governance and priority-setting, while creating a clearer framework to deepen collaboration in areas that matter most for national cancer control, notably prevention, screening, inequalities and cancer intelligence.

### Why IARC membership made the difference for Portugal:

- **Scientific leadership and integration:** Around **105 Portugal-IARC oncology papers** in the past decade, roughly **1 in 25 Portuguese oncology outputs**, place Portuguese teams in large international consortia (median **31 institutions**, spanning **177 countries**) on nutrition and obesity, screening disparities, genomics, digital health and HPV-related cancers. This collaboration also produces concrete innovation, notably the **UroMuTERT urine DNA test for early detection of bladder cancer** developed with the Portuguese Oncology Institute of Porto.
- **Evidence into policy and regulation:** IARC-linked work informs Portuguese reports on breast, cervical and colorectal screening, HPV vaccination and infection-related cancers, nutrition and hospital diets, and environmental carcinogens, including the **2016 parliamentary resolution on glyphosate**.
- **Building future public-health impact:** Portugal is using IARC membership to scale and structure emerging implementation agendas, notably in lung **cancer screening** and **gastric cancer prevention**. Building on the **Helicobacter pylori "test-and-treat" programme** launched on Terceira Island in 2024, it is now seeking to connect this experience to broader collaboration with IARC and related initiatives, to generate the evidence needed for more systematic prevention.
- **European and global platforms with practical reach:** Through IARC, Portuguese institutions contribute to and benefit from wider platforms on screening, cancer registration, inequalities monitoring, prevention communication and innovation. These links connect Portuguese data, expertise and pilot initiatives to the shared standards and comparative evidence that shape decisions across Europe.
- **Capacity and standards:** Portuguese trainees and fellows at IARC, together with **national experts** contributing to *IARC Monographs*, *IARC Handbooks* and **WHO Classification of Tumours** volumes, ensure that Portugal not only draws on independent international evidence but also helps shape the standards that will inform implementation of its **National Cancer Strategy "Horizonte 2030."**
- **Extending collaboration to the Portuguese-speaking African countries (PALOPs):** Beyond Portugal itself, the new collaboration is also beginning to extend into the **PALOPs** through planned work on cancer registries, biobanks, early detection and implementation readiness.

## Part I. Scientific leadership through international collaboration

### → Exceptional intensity and depth of collaboration

Even before formally becoming an IARC Participating State in 2025, Portugal was already collaborating closely with IARC, with Portuguese institutions embedded in large, coordinated, multi-country cancer studies. The publication data make this clear. In the last decade there were **105 Portugal-IARC co-authored oncology papers**<sup>1</sup>, compared with about **2505 Portuguese oncology papers without IARC**: roughly **1 in every 25** oncology papers from Portugal already involves IARC. These joint outputs are produced in large international consortia, with a **median of 31 institutions per paper, versus 4 in the non-IARC baseline**. In total, Portugal-IARC co-authored work links Portuguese teams with **1,940 unique institutions across 177 countries**, embedding the Portuguese research and public-health community in a genuinely global network.

<sup>1</sup> Data derived from Web of Science records of IARC-Portugal co-authored papers published between January 2016 and January 2026.

Web of Science micro-topic analysis shows that Portugal-IARC outputs are concentrated in high-impact, policy-relevant areas, led by:

- **Nutrition, obesity and metabolic risk**, including diet-related mechanisms that link excess weight and poor nutrition to major cancers;
  - **Screening disparities and early detection**, including the performance, reach and equity of population-based screening programmes;
  - **Genome-wide association studies (GWAS) and genetic testing**, supporting precision-prevention and risk-stratified screening;
  - **Digital mental health and digital tools** that support behaviour change and patient engagement;
  - **HPV and cervical cancer prevention**, tightly aligned with Portugal's vaccination and screening strategies;
  - Additional clusters in **maternal health equity, hypertension management and melanoma research**.
- ➔ **Leadership in global and European research infrastructure**

### Box #1: Cancer in Portugal: a high-burden profile in an ageing population

Based on [GLOBOCAN 2022 estimates](#), cancer is a major public-health challenge in Portugal, with around **69,500 new cases** and **33,800 deaths** in 2022. In an ageing, high-income population, incidence is largely driven by lifestyle-related and metabolic risk factors. For both sexes combined, the most frequent cancers are **colorectal, breast, prostate, lung and stomach**, while **lung, colorectal and stomach cancers** account for the largest share of deaths. This profile underlines the need for sustained action on **tobacco control, diet and obesity, physical inactivity and alcohol use**, alongside continued optimisation of evidence-based early-detection and screening programmes for the main cancer sites.

Through IARC, Portuguese institutions participate in - and increasingly help shape - major European research infrastructures that generate evidence directly informing cancer prevention, screening and risk assessment. These collaborations embed Portuguese registries, clinical expertise and prevention priorities in multi-country platforms with shared protocols, harmonised methods and pooled analyses, something that would be extremely difficult to coordinate through domestic channels alone. Recent examples include:

- **Strengthening screening systems and implementation research:** Portuguese authorities and cancer institutes are involved in IARC-linked work on screening indicators, quality frameworks and implementation models. Gastric cancer prevention is one of the clearest examples of this growing collaboration (see Box #3). At the same time, Portugal and IARC are discussing support for **pilot lung cancer screening programmes using low-dose computed tomography**, showing how membership is accelerating direct technical exchanges with the Ministry of Health on emerging screening priorities.

### Box #2: From Porto to practice: a urine DNA test for early detection of bladder cancer

Through an IARC-led collaboration with the Portuguese Oncology Institute of Porto, researchers have developed and validated **UroMuTERT** - a highly sensitive urine DNA test that detects mutations in the *TERT* promoter - the most common mutations in urothelial (bladder and upper-tract) cancers.

In multicentre case-control studies in France and Portugal, the test showed **excellent sensitivity and specificity**, clearly outperforming standard urine cytology, especially for low-grade, early-stage tumours. In the Portuguese series, the test correctly identified almost **seven in ten** bladder cancer cases while maintaining **near-perfect specificity**, meaning very few false positives.

Follow-up work by IARC and partners has also shown that these *TERT* mutations can be detected in urine **up to 10 years before clinical diagnosis**, opening the door to non-invasive early detection and targeted surveillance of high-risk groups (such as heavy smokers or people exposed to specific occupational carcinogens).

For Portugal, this project illustrates how **participation in IARC-coordinated consortia converts national clinical strengths into globally visible innovation**: Portuguese patients and clinicians help generate the evidence, while IARC provides assay development, multi-country design and comparative analysis.

- **Targeted surveillance and prevention in high-risk groups:** IARC-led work with Portuguese and United Kingdom partners, including the systematic review and meta-analysis of **anal squamous cell carcinoma, squamous intraepithelial lesions and human papillomavirus 16 (HPV16) infection in solid-organ transplant recipients**, strengthens the evidence base for surveillance and prevention strategies in vulnerable populations.

- **European platforms for cancer intelligence, prevention and innovation:** Portuguese institutions are connected, through IARC, to a broader set of European platforms that support cancer intelligence, prevention and innovation, including the **European Cancer Information System (ECIS)**, the **European Cancer Inequalities Registry**, the **European Prospective Investigation into Cancer and Nutrition (EPIC)**, the European Union Cancer Mission's **Understanding Cancer** cluster, **Understanding Cancer (UNCAN.eu)**, **Cancer Prevention Europe**,



**"This new set of initiatives is emerging because Portugal became an IARC Participating State."**

**Dr Andre Carvalho  
IARC Liaison Officer  
For Portugal**

**Comprehensive Cancer Infrastructures**, and implementation tools linked to the **European Code Against Cancer (ECAC)**. Together, these platforms link Portuguese data, cohorts, cancer centres and prevention expertise to wider European agendas in research, inequalities monitoring, innovation and policy translation (see Part II).

→ **Shaping the global cancer research agenda and standards**

Portuguese experts and diplomats help steer IARC's direction. Through seats on the **Scientific Council and Governing Council**, and active involvement in developing the [Medium-Term Strategy \(MTS\)](#), Portugal contributes directly to setting IARC's research and capacity-building priorities. This high-level engagement is a form of **soft power**. By shaping IARC's work programme, Portugal brings national and regional realities into global decision-making while gaining early insight into emerging priorities, methods, and partnership opportunities, aligning its own cancer plans and investments with cutting-edge international evidence.

Portugal also play a central role in developing widely respected **international evidence frameworks and classification standards** that shape global cancer science, prevention, and regulation. During the 2020-2025 cycle, 14 Portuguese experts have contributed to the IARC's flagship evaluations, including:

- **IARC Monographs Volume 128:** *Acrolein, Crotonaldehyde, and Arecoline*
- **IARC Monographs Volume 131:** *Cobalt, antimony compounds, and weapons-grade tungsten alloy*
- **IARC Monographs Volume 132:** *Occupational Exposure as a Firefighter*
- **IARC Monographs Volume 133:** *Anthracene, 2-bromopropane, butyl methacrylate, and dimethyl hydrogen phosphite*
- **IARC Monographs Volume 134:** *Aspartame, methyleugenol, and isoeugenol*
- **IARC Monographs Volume 136:** *Talc and Acrylonitrile*
- **IARC Monographs Volume 137:** *Hydrochlorothiazide, Voriconazole, and Tacrolimus*
- **IARC Monographs Volume 138:** *Automotive gasoline and some oxygenated gasoline additives*
- **IARC Monographs Volume 139:** *Hepatitis D Virus, Human Cytomegalovirus, and Merkel Cell Polyomavirus*
- **IARC Handbooks of Cancer Prevention Volume 18:** *Cervical cancer screening*
- **World Health Organization Classification of Tumours (Blue Books) 5th and 6th editions:** Editorial board and expert contributions supporting international tumour classification standards, diagnostic criteria, and reporting systems across multiple organ systems

**Part II. From evidence to action: IARC's impact on national Public Health**

→ **Evidence that informs national regulation and prevention policy**

In Portugal, IARC-linked evidence appears in **guidelines, screening reports, vaccination and hepatitis strategies, dietary manuals, and environmental-risk assessments**, where it supports regulation and prevention. An [Overton](#) analysis of Portuguese public-sector documents (2015-2026) shows IARC-led work being cited across **government reports, technical papers and parliamentary documents**, produced by bodies such as the **Direção-Geral da Saúde (DGS)**, the **Ministry of Health, parliamentary committees of the Assembleia da República**, and analytical institutions such as the **Fundação Francisco Manuel dos Santos**.



**"One major benefit of IARC membership is its ability to help us better structure and analyze epidemiological data, which is essential for effective public health policies."**

**Dr Anabela Isidro  
AICIB**

Across this corpus, IARC outputs are used to:

- **Shape cancer screening monitoring and programme design:** DGS reports on "**Avaliação e Monitorização dos Rastreios Oncológicos**" for breast, cervical and colorectal cancer draw on IARC evidence on screening performance, participation and inequalities. IARC-coordinated studies and comparative analyses are used as reference points when defining indicators, assessing coverage and quality, and planning extensions or adaptations of organised screening programmes.
- **Guide HPV vaccination and infection-related cancer prevention:** Clinical and public-health guidance on **HPV prevention and vaccination** and on **virus-related cancers and hepatitis programmes** cites IARC syntheses on HPV, hepatitis viruses and other oncogenic infections. This evidence base underpins decisions on priority age groups, vaccine products and dosing schedules, and supports the alignment of Portuguese strategies with WHO's cervical-cancer elimination goals.
- **Inform national dietary guidance and obesity-prevention efforts:** National healthy-eating manuals, **hospital diet standards**, and documents linked to the **National Food and Physical Activity Survey (IAN-AF)** use IARC cohort findings on **diet, excess weight and cancer**. Evidence from large IARC-supported

consortia is used to link red and processed meat, low fruit and vegetable intake, excess body weight and alcohol consumption to higher risks of colorectal, breast and other cancers, helping translate research on Mediterranean and plant-forward dietary patterns into practical Portuguese nutrition guidance.

- **Frame broader prevention priorities and communication:** Cross-cutting reports on **cancer prevention, inequalities and chronic-disease burden** reference IARC estimates of preventable cancer fractions and international burden-of-disease comparisons. This evidence helps Portuguese authorities argue that a substantial share of cancers is preventable and supports prioritisation of tobacco, alcohol, diet, obesity and infections in national cancer and health-promotion strategies.

A concrete example is the parliamentary debates on glyphosate which culminated in a resolution approved on **15 April 2016** (Resolução da Assembleia da República n.º 88/2016) in which the Assembleia da República explicitly relied on IARC's Monograph classification of glyphosate as 'probably carcinogenic to humans' to justify calls for stricter national controls and a more precautionary stance in EU pesticide negotiations. Another example is the **National Suicide Prevention Plan 2013–2017 (“Plano Nacional de Prevenção do Suicídio 2013-2017”)** which cites IARC-affiliated research on alcohol and cause-specific mortality (Zaridze et al., *The Lancet*, 2009) to frame alcohol as a key contributor to premature death, showing that IARC's early work on alcohol was already feeding into cross-cutting public-health strategies in Portugal, even beyond cancer-specific policies.

### → A European multiplier for evidence-based cancer policy

Across the European Union, IARC acts as a **multiplier of national efforts**, turning scientific evidence into coordinated, practical action at scale. An Overton analysis (2005-2026) identified **over 500 EU policy and technical documents** citing IARC research, demonstrating that IARC evaluations are routinely used by EU institutions and agencies to inform legislation, guidance, and public health strategies.

IARC both generates the evidence and translates it into action. Through large research infrastructures such as **EPIC (the European Prospective Investigation into Cancer and Nutrition)**, it produces long-term, high-quality data on risk factors and outcomes relevant to Europe. This is complemented by Europe-wide analyses that directly shape policy choices and guidance, for example, [work showing that recent increases in prostate cancer incidence in Europe are likely driven by PSA testing patterns](#) (with implications for screening approaches), [comparative burden estimates for Europe](#) (millions of new cancer cases and deaths annually), and [major studies mapping socioeconomic inequalities in cancer mortality](#) to inform targeted cancer control. Portuguese institutions are part of this wider ecosystem through EPIC, the European Union Cancer Mission's **Understanding Cancer** cluster, and broader initiatives such as **Understanding Cancer (UNCAN.eu)** and **Comprehensive Cancer Infrastructures**, where IARC plays a convening and methodological role linking cohorts, biobanks, experimental models, innovation and care pathways.

IARC also produces actionable modelling, showing that [scaling up tobacco control could prevent one in four lung cancer cases in Europe](#) (about **1.65 million fewer cases over 20 years**), and supports implementation

### Box #3: From local pilot to national strategy: Portugal and IARC on gastric cancer prevention

Gastric cancer is emerging as one of the clearest examples of how Portugal's IARC membership could translate into future public-health impact. Portugal had already begun to act locally, launching a **Helicobacter pylori “test-and-treat” programme on Terceira Island in 2024**. Since becoming a Participating State, it has sought to scale this experience into a broader collaboration with IARC, with the aim of generating the evidence needed to support more systematic gastric cancer prevention.

The new agenda links Portuguese clinical and public-health priorities to IARC's comparative and methodological strengths. Current discussions include possible participation in **Epidemiological Investigation of Gastric Malignancies (ENIGMA)** in high-risk regions, stronger engagement with **Towards Gastric Cancer Screening Implementation in the European Union (TOGAS)** and the **European Gastric Cancer Screening Network (EUGastScreen)**, and mobilisation of Portuguese experts to contribute to the first European guidance on gastric cancer prevention.

Portugal brings local experience, clinical leadership and pilot implementation, while IARC contributes standardised protocols, international comparison and the scientific framework needed to assess whether a promising local initiative can support broader policy. As Dr André Carvalho, IARC Liaison Officer for Portugal explained: **“gastric cancer prevention work was already under way in Portugal, but membership has created room to expand it within a wider international framework.”**

through initiatives such as EU-funded implementation research such as [EU Joint Action on the implementation of cancer screening programmes \(EUCanScreen\)](#), which sets common standards for screening delivery and quality assurance and [EUROHELICAN, assessing the feasibility of population-based H. pylori test-and-treat strategies for gastric cancer prevention](#). Portuguese authorities and institutes are part of this wider ecosystem, notably in gastric cancer prevention and in IARC-linked work that will help inform future Portuguese decisions on organised screening (see Box #3). In parallel, IARC remains a core technical partner in efforts to improve the quality, comparability and timeliness of cancer registry data and to refine indicators used in the [European Cancer Information System \(ECIS\)](#) and the [European Cancer Inequalities Registry \(ECIR\)](#). By contributing data and expertise to these platforms, Portuguese registries are integrated into comparative analyses that inform both European and national policy on cancer burden, survival and inequalities.

Together, this body of evidence feeds into one of IARC's flagship initiatives, the [European Code Against Cancer \(ECAC\)](#), which converts evidence into clear, practical prevention recommendations for governments and citizens across Europe. Portuguese partners contribute to this agenda through national translation and dissemination of ECAC recommendations, participation in the [European Union mobile application for cancer prevention](#), and projects such as [Personalised Cancer Primary Prevention through Citizen Participation and Digitally Enabled Social Innovation \(4P-CAN\)](#), which test more personalised and citizen-centred prevention approaches. Here again, IARC provides the evidence base, common methods and international platform, while Portuguese actors help adapt these tools to real-world settings. IARC also strengthens Europe's prevention ecosystem by convening and supporting major collaborative platforms, such as [Cancer Mission Europe](#) and [Cancer Prevention Europe](#), which accelerate translation of evidence into capacity building and practice across Member States.

By combining independent evidence, harmonised methods, and implementation support, IARC enables Participating States to **benchmark performance, share best practices, and adopt proven prevention strategies faster and more efficiently** than acting alone. For Portugal, this collaboration provides not only access to data and expertise, but a seat at the table where **European and global cancer control standards are defined**.

### Part III. Building capacity for lasting impact

#### → Talent pipeline into international cancer science

Training and knowledge exchange are also a core element of the Portugal-IARC relationship. During the **2021–2025** cycle, **four trainees from Portuguese institutions** have undertaken short and medium-term research attachments at IARC. These placements give early-career Portuguese scientists practical experience of multinational consortia and advanced analytical tools, and create durable links between Portuguese cancer centres and international research teams.



This engagement is part of IARC's wider capacity-building ecosystem, which includes the Postdoctoral Fellowship Programme, the IARC Summer School, the IARC Learning Platform, and global networks for cancer registries, screening and biobanking. Together, these initiatives train thousands of professionals worldwide and generate durable benefits: in a 2024 outcome survey, **98% of postdoctoral respondents reported transferable skills, 72% maintained research ties with IARC after training, and over half progressed to leadership roles (53%) or managed independent research funding (52%)**. This creates a **two-way multiplier effect**: expertise gained at IARC is reinvested in national institutions, while the priorities, data, and methodological strengths of participating countries feed back into IARC's networks, helping shape future research, standards, and capacity-building efforts.

#### → IARC as a multiplier of Portugal's influence across Lusophone countries

A distinctive feature of Portugal's collaboration with IARC is that it is not limited to national benefit. The new workplan shows Portugal using its linguistic and institutional ties to help extend IARC-supported cancer control into the **Portuguese-speaking African countries (PALOPs)**. Planned activities include piloting the **NEEDS tool in Cape Verde and São Tomé and Príncipe** to assess readiness for implementation, evaluating the feasibility of **Helicobacter pylori screening and treatment** in Cape Verde, strengthening cancer biobanks in **Praia and Maputo**, improving **early detection of breast cancer** in Mozambique and Angola, and supporting the quality of cancer registries across PALOP countries. This gives Portugal a distinctive role inside IARC: not only as a beneficiary of international collaboration, but also as a **bridge country** helping connect IARC methods, tools and technical support to Lusophone health systems.