IACR
International Association of Cancer Registries

IARC
REGIONAL HUB
FOR CANCER
REGISTRATION
NORTHERN AFRICA,
CENTRAL AND WESTERN ASIA

International Agency for Research on Cancer
World Health Organization
GLOBAL INTIATIVE
FOR CANCER REGISTRY
DEVELOPMENT

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IACR
2025

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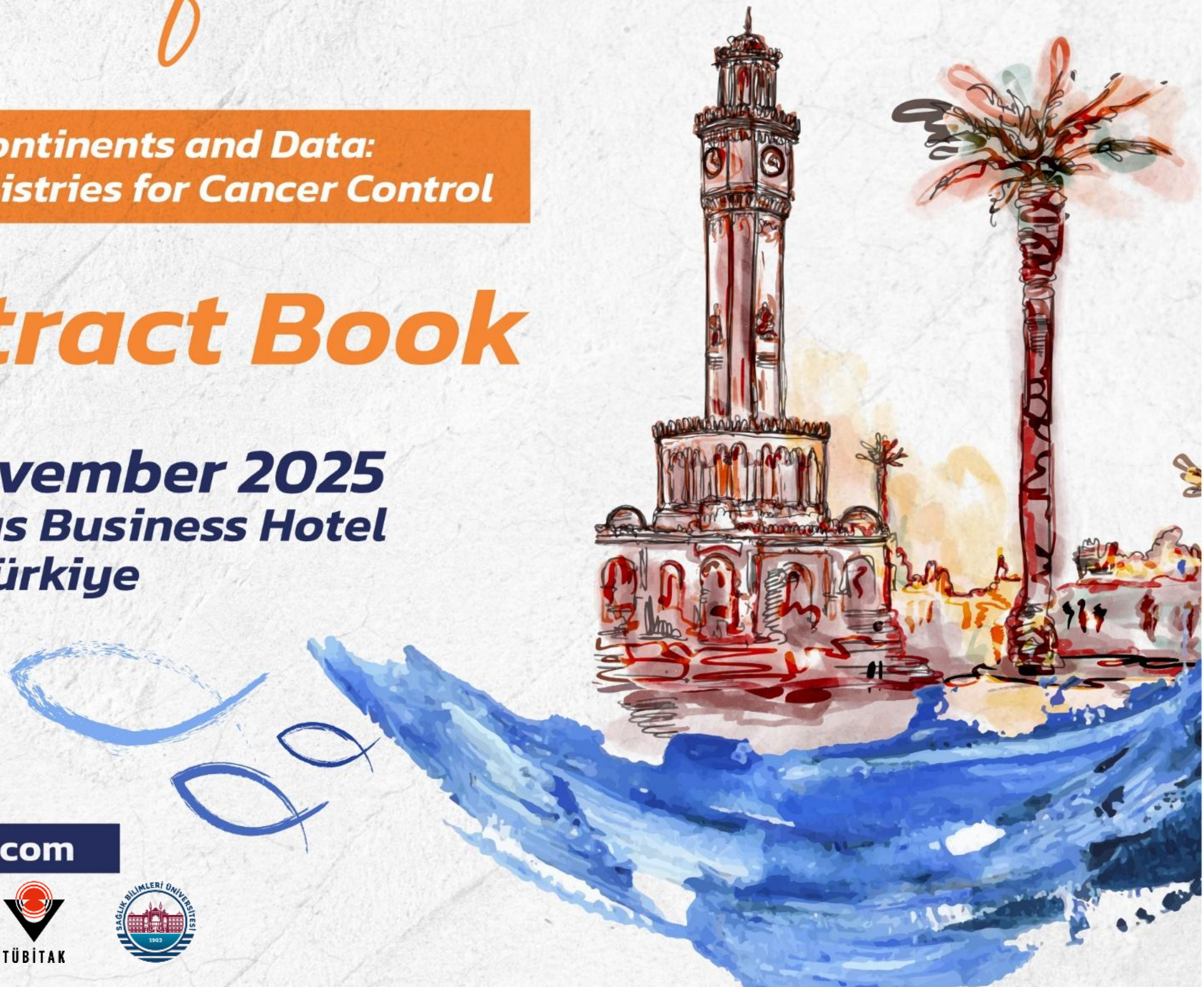
2025 IACR SCIENTIFIC Conference

Bridging Continents and Data: Cancer Registries for Cancer Control

Abstract Book



4-7 November 2025
Ege Palas Business Hotel
Izmir / Türkiye

www.iacr2025.com

Dalya
İZMİR BÜYÜKŞEHİR BELEDİYESİ
TÜBİTAK
SAĞLIK BİLİMLERİ ÜNİVERSİTESİ

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CONFERENCE PROGRAMME

4 NOVEMBER 2025 TUESDAY	
PRE-CONFERENCE ACTIVITIES - SMYRNA Hall (Main Hall), Ege Palas Business Hotel	
09:00 - 12:00	**PRE-CONFERENCE WORKSHOP: Large Language Models in Cancer Registry Innovation**
	The workshop explored how Large Language Models (LLMs) can accelerate the work of cancer registries. This session covered how LLMs work and provide examples from cancer registries and cancer research.
	[Link to Workshop Folder / Repository: https://github.com/IKNL/iacr_2025_llm_workshop](https://github.com/IKNL/iacr_2025_llm_workshop)
	Lead Faculty: ***Dimitris Katsimpokis***, Netherlands Comprehensive Cancer Organisation Co-Faculty: **Prof Hongmei Zeng**, National Cancer Center China **Prof. Iacer Calixto**, Amsterdam University Hospital **Irene Cara**, IKNL and Amsterdam UMC
12:00 - 13:30	LUNCH BREAK
13:30 - 16:00	**PRE-CONFERENCE WORKSHOP: Large Language Models in Cancer Registry Innovation (Part 2)**
	Hands-on practical session in Python, learning use of LLMs for text classification and text generation. Basic familiarity with Python is advised but not necessary.
13:30 - 17:00	**IACR Board of Directors Meeting (Hall C)** 13:30 - 16:00 *Closed Session*
16:30 - 17:30	**BENCHISTA Working Group (Smyrna Hall)**
18:00	**WELCOME RECEPTION FOR DELEGATES** **Havagazı Factory**

5 NOVEMBER 2025 WEDNESDAY	
IACR 2025 Day 1, SMYRNA Hall (Main Hall), Ege Palas Hotel	
08:30 - 08:40	OPENING REMARKS **IACR 2025 Scientific Conference Host** **Prof Sultan Eser**
08:40 - 08:50	**Message from the Dean, İzmir Medical Faculty, University of Healthy Sciences** **Prof Dr Enver İlhan**
09:00 - 09:30	KEYNOTE LECTURE: **Regional-Level Efforts and Collaboration in Strengthening Cancer Registration and Use of Cancer Registry Data for Cancer Control** ***Dr Heba Fouad, Noncommunicable Disease Surveillance Programme, World Health Organization EMRO*** Discussion moderated by ***Les Mery***
09:30 - 10:00	**Updates from the International Agency for Research on Cancer Research (IARC) and the Global Initiative for Cancer Registry Development (GICR)** *Freddie Bray, Head of Cancer Surveillance, International Agency for Research on Cancer*
10:00-10:15	**COFFEE & TEA BREAK**
10:15 - 11:30	**Plenary Session 1: Descriptive Epidemiology** Moderated by Sue Evans and J. Olufemi Ogunbiyi *Presentations followed by discussion after the last presenter*
10:20-10:30	Smoking Cessation in the Netherlands Can Prevent Over 120.000 Cancer Diagnoses In 22 Years' Time ***Jelle Evers***
10:30-10:40	Cervical Cancer in a High-Income Jurisdiction: What's New? A Randomized Trial of HPV Vaccination Invitations ***Donna Turner***
10:40-10:50	Persistent Inequities in LOCP Cancer: Evidence from 27 Years of Data in Sergipe, Brazil ***Carlos Anselmo Lima***
10:50-11:00	Comparison of ICD-10 and ICD-11 compliant cancer incidence using the Japan National Cancer Registry ***Ayako Okuyama***

11:00-11:10	Quality Indicators over Time of European Cancer Registries Data Submitted to the European Cancer Information System ***Joanna Julia Bartnicka***	
11:10-11:20	Twelve Labours to Better Find, Access and Utilize Linked Cancer Registry Data: Results from HERACLES ***Gijs Geleijnse***	
11:20-11:30	DISCUSSION	
11:30 - 12:00	SPECİAL PRESENTATİON: **Use of Cancer Registration Data in Contributing to Evidence-Based Cancer Prevention and Control in China** ***Prof Jie He, Director, National Cancer Center of China*** *Introduction by Prof Hongmei Zeng*	
12:00-13:30	LUNCH BREAK	
13:30 - 15:00	**Concurrent Session 1A : Descriptive Epidemiology** *Session Chairs: Kozeta Filipi and Tomohiro Matsuda*	**Concurrent Session 1B: Stage, Comorbidities, and Prognosis** *Session Chairs: Vesna Zadnik and Rob Verhoeven*
13:30 - 13:40	Spatiotemporal Analysis of Liver Cancer Considering Risk Factors: Hepatocellular Carcinoma and Cholangiocarcinoma in South Korea ***Eunhye Park***	Effect of Organized Breast Cancer Screening Program on Incidence and Mortality in China ***Siqi Wu Wu***
13:40 - 13:50		Availability Of TNM Stage In European Cancer Registries Within The European Cancer Information System, With A Focus On Six Major Cancers ***Cristina Bosetti***
13:50 - 14:00	Cancer In Sub Saharan Africa ***Biying Liu***	Uncovering disparities in metastatic breast cancer outcomes: an international population-based study ***Hanna Fink***
14:00-14:10	Central Nervous System Tumors in the Veneto Region, Italy: Incidence, Treatment And Survival By Histotype ***Stefano Guzzinati***	Breast Cancer Incidence and Stage During The Covid-19 Pandemic In The Greater Poland Region ***Maciej Trojanowski***

14:10-14:20	Epidemiological Characteristic of very rare lymphoid malignant hemopathies in A French department ***Marc Maynadie***	Lung Cancer in Never Smokers: A Population-Based Analysis Using Florida Cancer Registry Data ***Paulo Pinheiro***
14:20-14:30	The Impact of the Covid-19 Pandemic on Cancer Diagnosis Across Countries: An ICBP Population-Based Study ***Eileen Morgan***	Divergent Patient-Disease Characteristics, Treatment Patterns and Survival Outcome in De Novo Versus Metachronous Metastatic Breast Cancer:A Nationwide Comparative Study ***Ellis Slotman***
14:30-14:40	Tracking Cancer Transition in India: A Compositional Perspective Using Population Based Cancer Registries (1982-2012) ***Ananya K V***	Subsite-Specific Analysis of Colorectal Cancer by Stage at Diagnosis, Treatment Patterns, and Survival in China ***Jingyi Chen***
14:40-15:00	DISCUSSION	
15:00 - 15:30	COFFEE & TEA BREAK	
15:30 - 17:00	**Concurrent Session 2A:** **Innovation, Research and Policy** *Session Chairs:* *Sabine Siesling and Anton Barchuk*	**Concurrent Session 2B:** **Descriptive Epidemiology; Colloboration and Training** *Session Chairs: Lamia Kara and Stefano Guzzinati*
15:40 - 15:50	CanRegtools: An R package for Population-Based Cancer Registry Data Analysis ***Shaokai Zhang***	Trends and Predictions of the Burden of Malignant Tumors in Yunnan Province ***Hongmei Wen***
15:50 - 16:00	The REDCAN Training Courses: Building Capacity for Cancer Registration in Spain and Beyond ***Rafael Marcos-Gragera***	European Liver Cancer Burden by Subtype: Results From The European Cancer Information System (ECIS) ***Giorgia Randi***
16:00 - 16:10	Diverging Trends in Early- and Late-Onset GI Cancers: Global Patterns and Projections to 2040 ***Shaoming Wang***	Update On the Algerian Network of Cancer Registries: Assessing Cancer Incidence and Mortality Nationwide in 2022 ***Houda Boukheris***
16:10 - 16:20	Uneven Progress in Global Liver Cancer Control: Evidence Based on 10-Year Analysis Across 42 Countries by Age and Sex ***Xing Yao***	Cervical Cancer in Kyrgyzstan: Population-Based Trends in Stage and Mortality, 2016–2023 ***Elena Ten***

16:20 - 16:30	Financial Toxicity and Quality of Life in Vietnamese Cancer Patients: Informing Future Cancer Registries ***Tran Thu Ngan***	Pooling Expertise and Resources to Build an Innovative Educational Legacy in the Carribbean: Savoir ***Jacqueline Veronique-Baudin***
16:30 - 16:40	Cancer RADAR – Mapping Cancer Risk Among Individuals with a Migration Background Across Europe ***Stefano Rosso***	Access Barriers to Cancer Data: Lessons Learnt from Nairobi Population-Based Cancer Registry ***Melvine Obuya***
16:40 - 16:50	Intelligent Automation in Population-Based Cancer Registration: A Novel AI-Driven Platform for Streamlined Data Processing and Multi-Level Quality Control ***Can Li***	Workload of Cancer Registry Staff After Legal Changes: The Case of Greater Poland Cancer Registry ***Lukasz Taraszkiewicz***
16:50-17:00	DISCUSSION	
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6 NOVEMBER 2025 THURSDAY		
I ACR 2025 Day 2, SMYRNA Hall (Main Hall), Ege Palas Hotel		
08:00 - 09:00	Partners’ Side Event: **IARC-GICR Gulf CDC Working Group Meeting** (closed session) *Venue: Ephesus Hall*	
08:00 - 09:00	Partners’ Side Event: **CancerWatch EU Joint Action WP5 Meeting** *Venue: Smyrna Hall*	
09:00 - 09:30	IACR 2025 CLEMMESEN LECTURE **Overcoming the colorectal cancer epidemic in the decades to come: Lessons from half a century of colorectal cancer screening research** **Prof Hermann Brenner** Discussion moderated by: Freddie Bray	
09:30 - 09:45	**Awarding of the IACR Honorary Membership Award to Prof Hermann Brenner** **Introduction by Volker Arndt** Moderator: Freddie Bray	
09:45 - 10:45	**Plenary Session 2: Innovation, Research and Policy** **Moderated by Hongmei Zeng and Gijs Geleijnse**	
09:45 - 09:55	When Data Speaks, Action Follows: A Registry-Driven Philanthropic Model for Cervical Cancer ***Swarnima Jaitley***	

09:55- 10:05	Estimating the Timing of Ovarian Cancer Progression and Recurrence: Construction of a Machine-Learning Algorithm Based on Population-Based Administrative Data ***Freija Verdoot***	
10:05 - 10:15	CaRDO: an R package for Visualising and Publishing Population-Level Cancer Statistics ***Peter Baade***	
10:15 - 10:25	Assisting Registrar Queries with Retrieval-Augmented Generation (RAG) During Cancer Registration ***Dimitris Katsimpokis***	
10:25 - 10:35	Automated Coding For Cancer Diagnosis Using Large Language Models: A Panel Study in China ***Kexin Sun***	
10:35- 10:45	DISCUSSION	
10:45 - 11:15	COFFEE & TEA BREAK	
11:15 - 11:45	KEYNOTE LECTURE: **The Pediatric Cancer Registry Experience in Türkiye: Insights and Challenges** ***Dr . Tezer Kutluk*** Moderator: Ceren Sunguc	
11:45 - 12:45	**Plenary Session 3: Childhood Cancer** **Moderated by Marianna Camargo de Cancela and Ahmad AlHatlan**	
11:50 - 12:00	Sixty Years of Monitoring Childhood and Adolescent Cancer Survival in Slovenia ***Maja Jurtela***	
12:00- 12:10	Epidemiology of Adolescent and Young Adult Cancer and Disparities in Cancer Care in Varanasi, India ***Divya Khanna***	
12:10- 12:20	Benchmarking Childhood Cancer Care: Empowering Population-Based Cancer Registries through the BENCHISTA Project ***Fabio Didonè***	
12:20- 12:30	Country Based Risk Assessment of Subsequent Primary Neoplasms after Childhood Cancer: The CRICCS Study Results ***Ceren Sunguc***	
12:30- 12:45	DISCUSSION	
12:45 - 14:00	LUNCH BREAK	
14:00- 15:30	**Concurrent Session 3A:** **Collaboration and Training; Descriptive Epidemiology** *Session Chairs: Karen Knight and Paulo Pinheiro*	**Concurrent Session 3B:** **Innovation, Research, and Policy** *Session Chairs: Mariam Zahwe and Rafael Marcos-Gragera*

14:10-14:20	Enhancing Cancer Registries in the Gulf Cooperation Countries (GCC): Gulf CDC and IARC Partnership ***Sadeem Alshiban***	Over One-Third of Cancer Cases and Two-Fifths of Cancer Deaths in Southern China Are Preventable: Insights from the latest Representative Population-Based Cancer Registry Data and Risk Factor Survey ***Xiaolan Wen***
14:20-14:30	Leveraging Digital Infrastructure to Improve Cancer Registry Data Quality: Insights from the UAE National Cancer Registry ***Dr Mariam Alameeri***	Federated LLM Automates Pathology Data Extraction at Tertiary Hospital to Support National Registry Efforts in Singapore ***Jens Samol***
14:30-14:40	Impact of Smoking History on Population-Based Lung Cancer Survival in İzmir, 2010–2019 ***Hüseyin Örün***	Cancer Registration System in Uzbekistan: Developing a National Cancer Registry ***Sayde Djanklich***
14:50-15:00	Algerian Population-Based Cancer Registries Network Data Summary, 2022: Incidence and Main Cancer Types ***Lamia Kara***	Enhancing Cancer Registry Data Quality in less-developed Cities: A Short-Term Training-Focused Approach ***Yanhua Zou***
15:00-15:10	Cervical Precancer Screening and Invasive Cervical Cancer in Ekurhuleni District South Africa: 2005-2021 ***Kwandokuhle Shabalala***	Quality Assurance of Cancer Screening by Identifying Cancer Patients Using Cancer Registry Data ***Masashi Matsuzaka***
15:10-15:20	The Proportions of Cancers Associated with Modifiable Risk Factors in Luxembourg ***Jason Settels***	The Role of Cancer Registries in Advancing Lung Cancer Screening (LCS) in Middle-Income Countries (MICs) ***Hamida Petrović***
15:20-15:30	Effect of WHO's Guidelines for Covid-19 Mortality Coding on Underreporting of Cancer Deaths in Slovenia ***Tina Žagar***	Health Behaviors and Socioeconomic Factors Associated with Pap Smear Screening Among Women Living in Martinique ***Rémi Houpert***
15:30-15:50	DISCUSSION	
15:50 - 16:15	COFFEE & TEA BREAK	
16:15-18:00	**Concurrent Session 4A:** **Descriptive Epidemiology** *Session Chairs: Anne Korir and Eileen Morgan*	**Concurrent Session 4B:** **Mixed themes** *Session Chairs: Shaoming Wang and Marc Maynadie*

16:20-16:30	Impact of Demographic Transition on Thyroid Cancer: Izmir Cancer Registry Data, 1998–2017 ***Ali Cem Yekdeş***	Building on the Platform of the Australian Cancer Atlas: Results and Opportunities for Expansion ***Peter Baade***
16:30-16:40	Professional Collaboration and its Impacts on Registry Data: The Ibadan Cancer Registry Experience ***J. Olufemi Ogunbiyi***	Fighting Cancer in Albania: A Health System Under Pressure ***Kozeta Filipi***
16:40-16:50	Trends in the Diagnosis of Prostate Cancer in Ireland by Type of Care Provider ***Ciarán Haugh***	Interface Between Hospital-Based and Population-Based Cancer Registries: The Brazilian Experience ***Marianna de Camargo Cancela***
16:50-17:00	Hepatocellular Carcinoma: Do Etiologies Matter for Prognosis? The Case of Madeira, Portugal ***Pedro Berenguer***	Causes of Death in Survival Analysis of Cancer Patients ***Gemma Gatta***
17:00-17:10	Global Trends in Kidney Cancer: GLOBOCAN 2022 Estimates of Incidence and Mortality ***Anton Barchuk***	Cancer Incidence and Social Deprivation: A Spatio-Temporal Analysis in Guadeloupe ***Bernard Bhakkan-Mambir***
17:10-17:20		Incidence of Common Cancers in Georgia in 2015–2019: A National Cancer Registry Study ***Ani Beraia***
17:40-18:00	DISCUSSION	
19:30	IACR 2025 Conference Dinner *Venue: La Fourmi Restaurant*	
7 NOVEMBER 2025 FRIDAY		
I ACR 2025 Day 3, SMYRNA Hall (Main Hall), Ege Palas Hotel		
08:30-10:00	**Plenary Session 3: Stage, Comorbidities, and Prognosis** Moderated by Isabelle Soerjomataran and Deirdre Murray	
08:44-08:55	Cancer Survival for Rare and Common Cancers Based on the Japanese National Cancer Registry Data ***Hiromi Sugiyama***	

08:55-09:05	Short-term Breast Cancer Survival 2015-2018 in 35 Countries World-wide, by Age, Stage and Subtype (VENUSCANCER) **Veronica Di Carlo**
09:05-09:15	Are We Meeting the WHO GICC Target? An International Cancer Survival Index From CONCORD-4 **Claudia Allemani**
09:15-09:25	Cancer Survival for Selected Cancers in Türkiye (2010-2017): A Population-Based Study ***Mariam Zahwe***
09:25-09:35	Lifestyle Factors and All-Cause Mortality In Long-Term Cancer Survivors: A Population-Based Prospective Cohort Study ***Chunsu Zhu***
09:35-09:45	Cancer Recurrence, Progression and Transformation: New ENCR Guidelines for Population-Based Cancer Registries ***Anna Gavin***
09:45-10:00	DISCUSSION
10:00 - 10:30	COFFEE & TEA BREAK
10:30 - 11:30	**IACR 2025 CLOSING SESSION** Chaired by Chuck Wiggins and Donna Turner
10:30-11:15	**IACR 2025 Awards and Fellowships** **The IACR Honorary Membership Awardees** Moderated by *Donna Turner*
11:15-11:30	Remarks by the IACR President ***Charles Wiggins***
11:30-11:45	**IACR 2026 Host City Invitation** **Final Remarks**

IACR 2025 CLEMMESEN LECTURE

OVERCOMING THE COLORECTAL CANCER EPIDEMIC IN THE DECADES TO COME: LESSONS FROM HALF A CENTURY OF COLORECTAL CANCER SCREENING RESEARCH

Prof Hermann Brenner, 2025 IACR Honorary Membership Awardee

Hermann Brenner graduated in Medicine (M.D.) at the University of Tübingen, Germany, in 1985, and in Epidemiology (M.P.H.) at the University of North Carolina at Chapel Hill, USA, in 1988. He established, as Founding Head, a Unit of Epidemiology (1990-1993) and a Department of Epidemiology (1995-2000) at the University of Ulm, Germany. In 2000, he was appointed Professor of Epidemiology at the Universoty of Heidelberg, Germany, led a Division of Epidemiology at the German Centre for Research on Ageing in 2000-2005 and established and led a Division of Clinical Epidemiology and Aging Research at the German Cancer Research Center in Heidelberg since 2006.

Dr. Brenner has been among the internationally leading pioneers in epidemiological methods and cancer prevention research since the 1990s. Earlier work focused on cancer-registry based studies, on the epidemiology of Helicobater pylori infection, and on epidemiological ageing research. In recent years, the major focus was on the epidemiology of and prevention of cancer, in particular colorectal cancer. Dr. Brenner has initiated and led multiple national and international consortia in cancer epidemiology and prevention, and his pioneering work has been acknowledged my multiple prestigious national and international research awards. His more than 1500 publications have been cited more than 199,000 times, and he ranks among the top cited scientists in Medicine both nationally (no. 5) and globally (no. 245) (D-Index 174, see https://research.com/u/hermann-brenner).

A major focus of Dr. Brenner’s work has always been the most responsible translation of relevant progress in medical research into clinical and public health practice, in particular in the field of cancer prevention and screening. In 2019, Dr. Brenner was nominated as Chair of the Workgroup on Cancer Prevention in the National Decade against Cancer by the German Federal Ministry of Education and Research. He furthermore is founding member and Steering Committee member of Cancer Prevention Europe, and in 2022 established, as scientific leader and coordinator, the Cancer Prevention Graduate School at the National Cancer Prevention Center in Heidelberg, Germany.

SPECIAL PRESENTATION

USE OF CANCER REGISTRATION DATA IN CONTRIBUTING TO EVIDENCE-BASED CANCER PREVENTION AND CONTROL IN CHINA

Prof Jie He
Director, National Cancer Center of China, National Clinical Research Center for Cancer, and Presıdent, Cancer Hospital, Chinese Academy of Medical Sciences

Professor He is a 2025 inductee to the National Academy of Medicine, United States of America, in recognition of his transformative contributions to cancer research, public health, and clinical care, which have profoundly improved outcomes for one-quarter of the world's population and set new benchmarks in global oncology. Under his leadership, China's five-year cancer survival rate rose from 30.9% in the early 2000s to 43.7% in 2021, reflecting unprecedented progress in prevention, diagnosis, and treatment during the most populous era in human history.

Jie He is a leading figure in cancer research and clinical trials in China, playing a pivotal role in standardizing and advancing cancer clinical research within the country. He oversees the National Cancer Center, based at CICAMS and is responsible for cancer prevention, diagnosis, and treatment at a national level. He has been instrumental in establishing key infrastructure, including China's first ethics committee for cancer clinical trials and the first centralized management system for clinical trials. His leadership has contributed to CICAMS becoming a top-ranked institution for cancer care in China. He is also involved in major national initiatives, such as the China National Cancer Screening (CHANCES) trial, which aims to evaluate screening strategies for lung and colorectal cancer Additionally, he has contributed to the development of a six-step quality-improvement model for cancer diagnosis and treatment in China. Prof He is affiliated with the Chinese Academy of Medical Sciences and Peking Union Medical College, where he holds positions in the Department of Thoracic Surgery and the Office for Cancer Diagnosis and Treatment Quality Control. He is also a member of the editorial board for the journal, Cancer Communications.

KEYNOTE PRESENTATION

REGIONAL-LEVEL EFFORTS AND COLLABORATION IN STRENGTHENING CANCER REGISTRATION AND USE OF CANCER REGISTRY DATA FOR CANCER CONTROL

Dr Heba Fouad
Noncommunicable Disease Surveillance Programme, World Health Organization EMR

Dr. Heba Fouad is a prominent public health expert serving as the Regional Advisor for Noncommunicable Diseases (NCD) Surveillance, Monitoring, and Evaluation at the World Health Organization (WHO) Regional Office for the Eastern Mediterranean (EMRO). She is based in Cairo, Egypt, and plays a key role in shaping NCD policy and surveillance across the region.

Her work focuses on the prevention and control of noncommunicable diseases, including cardiovascular diseases, cancer, diabetes, and chronic respiratory diseases. She has led and contributed to major regional studies, including the WHO STEPS surveys in the occupied Palestinian territory and assessments of NCD service disruptions during the COVID-19 pandemic. She is also actively involved in tobacco control, digital health, and cancer surveillance initiatives.

Dr. Fouad has co-authored numerous high-impact publications in journals such as The Lancet and BMC Public Health, with research spanning obesity, hypertension, tobacco use, and health system resilience. She advocates for evidence-based, cost-effective interventions—known as "best buys"—to reduce the burden of NCDs in the Middle East and North Africa (MENA) region.

KEYNOTE PRESENTATION

THE PEDIATRIC CANCER REGISTRY EXPERIENCE IN TÜRKİYE: INSIGHTS AND CHALLENGES

Dr Tezer Kutluk MD, PhD, FAAP

Prof Kutluk graduated from Hacettepe Medical School in third rank among graduates in 1981. He was a postdoctoral fellow and Fulbright scholar at the Department of Experimental Pediatrics, MD Anderson Cancer Center. He served as a leading healthcare executive at Hacettepe University, Director of Children's Hospital, President of Institute of Child Health, Director of Oncology Hospital, President of Institute of Oncology, eventually becoming Chief Executive Officer of Hacettepe University Hospitals (2008-2011).

Prof Kutluk chaired the Department of Pediatric Oncology at Hacettepe Hospitals. He has more than 250 publications and numerous citation in international medical journals. He also has long-term experience on national and international non-governmental organisation management, serving as President of the Turkish Association for Cancer Research and Control, President of European Cancer Leagues (ECL), President of Turkish Pediatric Oncology Group, and Chair of Turkish UNICEF National Committee. He served as the board member of POEM. He was named as an honorary fellow of by American Academy of Pediatrics (FAAP) in 2014. He was the President of the Union for International Cancer Control (UICC) from 2014 to 2016. He was invited and gave a message at the opening session on United Nations General Assembly for high-level review of NCDs in July 2014. He is the associate editor of ECancer. He served as associate Editor of the JCO Global Oncology. He is currently Scientific Director of Medicana Health Group, Turkiye.

IACR PRE-CONFERENCE WORKSHOP:LARGE LANGUAGE MODELS IN CANCER REGISTRY INNOVATION

Faculty

Dimitris Katsimpokis, PhD (Lead Faculty) Senior Clinical Data Scientist, IKNL Netherlands Comprehensive Cancer Organisation. *"My work focuses on prediction modeling for cancer with machine learning (e.g. survival and early detection modeling), Large Language Modeling for knowledge retrieval, synthetic cancer data generation and quality control, as well as causal inference for social epidemiology. With a background on statistical modeling for real-world data, I am passionate about using data to understand complex problems. My most recent project concerns forecasting survival and prevalence of cancer in the Netherlands until 2045."*

Prof Hongmei Zeng, National Central Cancer Registry, National Cancer Center/Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China, Visiting Scientist, Harvard T.H. Chan School of Public Health. *Prof Zeng earned her PhD from Peking University in 2011 and studied at Yale University, School of Public Health, in 2009-2010. She earned her bachelor's degree from Nanjing Medical University in 2006. Her research focuses on cancer etiology and prevention, cancer registration, and epidemiological studies, including population-based cancer survival and the relationship between long non-coding RNA in plasma and early gastric cancer. She has contributed to major national research programs, such as the "Publication of Chinese Cancer Atlas" and the "Development and assessment of cohorts on upper gastrointestinal cancer screening". Zeng has published over 30 articles and book chapters in the field of cancer epidemiology and has been cited over 22,900 times. She has served as a co-author on significant publications, including reports on cancer statistics in China and cancer survival in the country. She is also involved in the development of the National Cancer Data Linkage Platform of China.*

IACR PRE-CONFERENCE WORKSHOP: LARGE LANGUAGE MODELS IN CANCER REGISTRY INNOVATION

Faculty

Prof Iacer Calixto, Assistant Professor and Principal Investigator at Amsterdam UMC, affiliated with the Medical Informatics department. *Iacer leads the NLP4Health Lab Amsterdam, focusing on natural language processing (NLP) applications in healthcare, including clinical text mining, machine learning, and health data science. His research aims to develop AI-driven tools for improving clinical decision support, patient outcomes, and health informatics infrastructure. He holds a PhD and has an active publication record in medical informatics and computational linguistics, an Erasmus Mundus Master in Natural Language Processing and Human Language Technology, a MSc degree in Computer Science, and a BSc degree in Information Systems.*

Irene Cara, IKNL Netherlands Comprehensive Cancer Organisation and Amsterdam UMC (Medical Oncology). *PhD candidate at IKNL and Amsterdam UMC with over a decade of experience in data science and machine learning. Previously held senior roles at Philips and TNO, contributing to applied research and advanced analytics in healthcare and technology domains. Currently focused on dynamic prediction modeling using survival analysis and natural language processing to support care for patients with metastatic esophagogastric cancer. Skilled in translating complex data into actionable insights, with a strong foundation in both academic research and industry-driven innovation.*

ORAL PRESENTATIONS

Workload of Cancer Registry Staff After Legal Changes: The Case of Greater Poland Cancer Registry

Lukasz Taraszkiewicz[1], Anna Kubiak[1], Patryk Włodarczyk[1], Maciej Trojanowski[1]

[1]Greater Poland Cancer Registry, Greater Poland Cancer Center, Poznan, Poland
[2]Polish National Cancer Registry, Maria Sklodowska-Curie National Research Institute of Oncology, Warsaw, Poland

Background/ Purpose: Before recent legal changes, the Greater Poland Cancer Registry (GPCR) operated using structured cancer notification forms submitted in paper or electronic format. Registry staff primarily verified pre-filled forms and had limited access to hospital systems. Since October 2024, a regulatory amendment has mandated cancer data submission via teleinformation systems—either through the national eKRN+ platform or integration with hospital information systems (HIS). GPCR has promoted the latter, as it reduces the reporting burden on physicians and improves data completeness by including inputs from both clinical and pathology sources. HIS submissions typically contain diagnostic notes (e.g., radiology reports), treatment records, and follow-up documentation. This study examines how these changes affected registry workflows and workload.

Methods / Approaches: We analyzed efficiency of new system implementation, comparing data collection methods and organizational processes before and after the initial phase of HISs–eKRN+ integrations.

Results: HIS-eKRN+ integrations have fundamentally changed registry operations. Staff now process significantly larger volumes of unstructured data, requiring clinical insight and coding expertise. This shift necessitated targeted training in medical documentation, terminology, classification systems, and standardized coding rules. In Q1 2025, the number of submissions accompanied by full electronic medical records rose from 331 (Q1 2024) to 1,627, increasing their share from 4.5% to 23.1%. At the same time, manually completed forms declined. Notably, new data source emerged in 2025, introducing standalone pathology reports. Their inclusion highlights the expanding scope of data sources and the growing responsibility of registrars in interpreting diagnostic content.

Conclusion: The shift from passive verification to active interpretation has increased time demands and reshaped the role of cancer registry staff, expanding their responsibilities into clinical data analysis. Sustaining high-quality data now requires advanced skills, continuous education, and institutional support. In this context, support from NLP models offers a promising and much-needed tool to assist registrars in managing complex unstructured medical information.

Keywords: data collection, natural learning process, hospital information system, cancer registrar, unstructured data

Uncovering Disparities In Metastatic Breast Cancer Outcomes: An International Population-Based Study

Hanna Fink[1], Isabelle Soerjomataram[1], Aude Bardot[1], Aline Brennan[2], Ryan R Woods[3], Lou Gonsalves[4], Jan F. Nygård[5], Serban Negoita[6], Esmeralda Ramirez-Pena[6], Karen Gelmon[3], Sabine Siesling[7], Fatima Cardoso[8], Julie Gralow[9], Eileen Morgan[1]

[1]Cancer Surveillance Branch, International Agency for Research on Cancer (IARC/WHO)
[2]National Cancer Registry Ireland
[3]BC Cancer
[4]Connecticut Tumor Registry, State of Connecticut, Department of Public Health
[5]Cancer Registry of Norway, Norwegian Institute of Public Health NO
[6]Data Quality, Analysis, and Interpretation Branch, Division of Cancer Control and Population Sciences, Surveillance Research Program, National Cancer Institute, National Institutes of Health
[7]Department of Research and Development, Netherlands Comprehensive Cancer Organisation (IKNL)
[8]Breast Unit, Champalimaud Clinical Center/Champalimaud Foundation and ABC Global Alliance
[9]American Society of Clinical Oncology

Background/ Purpose: Despite significant advances in breast cancer treatment and improved survival rates in high-income countries, disparities in care and outcomes persist, particularly for recurrent metastatic breast cancer (MBC). This study examines international variations in recurrent MBC survival across Canada, Ireland, and the Netherlands, investigating how tumor subtype, treatment approaches, and guideline adherence influence patient outcomes in these comparable healthcare systems.

Methods / Approaches: We used population-based cancer registry data from Canada (British Columbia), Ireland, and the Netherlands to identify women initially diagnosed with non-metastatic breast cancer (stages I–III) between 2005–2008 who developed metastatic recurrence (2008–2010). Patients were followed through 2015. Variables included tumor subtype (HR+/HER2−, HER2+, HR−/HER2−), metastasis sites, and treatment modalities. Survival was analyzed using Kaplan-Meier estimates, log-rank tests, and age-standardized net survival at 1-, 3-, and 5-years post-recurrence.

Results: Treatment modalities varied considerably across countries, with more patients receiving chemotherapy in Ireland (68.8%) than the Netherlands (55.8%), and substantially more patients receiving radiotherapy in Canada (88.1%) than the Netherlands (71.4%). Median overall survival varied across registries, ranging from 12 months in Ireland to 17 months in the Netherlands ($p=0.053$). Across all timepoints, net survival was highest in patients with HR+/HER2- tumours and lowest in patients with HR-/HER2- tumours. Patients in the Netherlands consistently had the highest survival across all subtypes, with 1-year net survival in patients with HR+/HER2− tumours

reaching 67.7% (95% CI: 64.6–70.6%) compared to 54.1% (95% CI: 47.1–60.5%) in Ireland. These differences persisted, though narrowed, over time.

Conclusion: Our findings revealed international disparities in recurrent MBC survival, likely driven by differences in treatment practices and access to therapies. Reducing these disparities requires coordinated efforts toward equitable therapy access, enhanced population-level data collection, and strengthened international collaboration to standardize optimal care practices.

Keywords: Metastatic breast cancer, Survival disparities, Tumor subtypes, Population-based registries

Lifestyle Factors And All-Cause Mortality In Long-Term Cancer Survivors: A Population-Based Prospective Cohort Study

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Background/ Purpose: The association between healthy lifestyles and mortality in cancer survivors remains inconclusive with no evidence among long-term cancer survivors (LTCS, survived ≥5 years post-diagnosis). Our study aims to investigate the association between individual and combined healthy lifestyle factors and mortality in LTCS.

Methods / Approaches: We recruited 6,057 LTCS of breast, colorectal or prostate cancer via six population-based cancer registries from multiple regions in Germany (Bremen, Hamburg, North Rhine-Westphalia, Rhineland-Palatinate, Saarland, and Schleswig-Holstein). Information regarding modifiable lifestyle factors was collected from August 2009 until April 2011 via postal questionnaires. Cancer registries provided information on the underlying cancer diagnosis and the vital status follow-up of the participants including date of death until end of 2021. A healthy lifestyle score (HLS) comprising self-reported alcohol consumption, physical activity, body mass index (BMI) and smoking was created and was classified into tertiles with higher tertile indicating healthier lifestyle. We used Cox proportional hazards regression to examine the associations of individual lifestyle factors and HLS with all-cause mortality among LTCS.

Results: A total of 2,015 death events occurred over a maximum follow-up period of 12.3 years. Compared with the lowest tertile, participants in the middle and highest tertile experienced a 27% and 32% lower mortality (middle [hazard ratio (HR), 0.73; 95%CI, 0.65-0.83]; highest [HR, 0.68, 95%CI, 0.61-0.76]). A significant dose-response relationship was observed (p-trend < 0.001). These associations were consistent across different demographic and clinical characteristics. In

addition, full adherence to lifestyle recommendations for smoking, physical activity and BMI were significantly related to a lower mortality, after full adjustment.

Conclusion: Adherence to an overall healthy lifestyle was associated with significantly lower all-cause mortality in LTCS, emphasizing the importance of maintaining and promoting a healthier lifestyle among LTCS.

Keywords: Cancer survivors, lifestyle, all-cause mortality, prospective cohort, population-based

Quality Indicators Over Time of European Cancer Registries Data Submitted to the European Cancer Information System

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Background/ Purpose: Quality indicators are used for assessing quality and comparability of data collected by cancer registries. To compare the quality of data submitted for the 2022 data call to the European Cancer Information System (ECIS) by 85 cancer registries affiliated to the European Network of Cancer Registries (ENCR), we computed quality indicators and compared them across calendar periods, cancer entities, and age groups.

Methods / Approaches: The analysis considered the period 2000-2019 and population over 19 years. We calculated the percentage of unknown or missing values on the original submitted datasets and analysed other indicators on the final validated datasets: proportions of cases with death certificate only (DCO), morphological verification (MV) and unspecific morphology (UM). Quality indicators were calculated separately for each registry, disaggregated by four periods (2000-2004, 2005-2009, 2010-2014, and 2015-2019), ECIS cancer entities and three age groups (20-44, 45-69, and 70+).

Results: Missing values for sex were found for 6 registries, with a median of 0.026% in this subset. Missing values for age were found for 8 registries, with a median of 0.005% in this subset. The median proportion of DCO was 1.4%, highest for the age group 70+ (2.4%) and for liver and pancreatic cancers (3.3%). DCO% was highest in 2000-2004 (2.3%) and lowest in 2015-2019 (1.2%). The median proportion of MV was 87.8%, lowest for the age group 70+ (81.2%) and for liver cancer (45.1%). MV% was lowest in 2000-2004 (86.7%) and highest in 2015-2019 (89.4%). The median proportion of UM was 11.7%, highest for age 70+ (18.6%) and for pancreatic cancer (46.6%). UM% was highest in 2000-2004 (12.6%) and lowest in 2015-2019 (10.4%). Results showed high variability across registries.

Conclusion: The quality of data provided by European cancer registries has increased over time. Lowest data quality was observed in older ages, and for liver and pancreatic cancers.

Keywords: data quality, quality indicators, validity

Cervical Precancer Screening And Invasive Cervical Cancer In Ekurhuleni District South Africa: 2005-2021

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Background/ Purpose: Cervical cancer (CC) is the second leading cause of cancer-related morbidity and mortality among middle-aged women in low-middle-income countries like South Africa. Cervical precancer screening (CPS) plays a crucial role in the prevention of CC. This study sought to determine the association between CPS and CC.

Methods / Approaches: A case-control study was conducted among women age 15 years and older, who resided in Ekurhuleni, Gauteng, South Africa, from 2005 – 2021. Incident records from the Ekurhuleni Population-Based Cancer Registry were linked to CPS data using STATA. Conditional multivariable logistic regression was used to estimate adjusted odds ratios (aOR), adjusting for age, with race, HIV status, and alcohol use as predictors.

Results: Among 31570 women included, 47.6% (n = 15 027) were CC cases and 52.4% (n = 16 543) were controls. The median age was 48 years (IQR: 41-59). From 2016 – 2021, 81.8% of eligible women (aged 20 – 49) were screened at least once, and 41.7% more than once. Cytology results revealed 67.6% normal results, 20.9% low-risk lesions, 9.0% high-risk lesions, 0.24% CC, and 2.3% inconclusive outcomes. CPS was associated with increased odds of CC (aOR: 1.39; 95% CI: 1.22–1.59; $p < 0.001$). Other significant risk factors included HIV infection (aOR: 1.63), being Coloured (aOR: 13.1), being Black (aOR: 5.2), and alcohol use (aOR: 1.5).

Conclusion: Despite a high CPS coverage among women in Ekurhuleni, South Africa, significant gaps in the prevention of CC persist. The positive association between CPS and CC suggest gaps in screening methods, delayed or lost to follow-up, prolonged time-to-treatment, and potential detection bias. To mitigate these gaps, targeted strategies must address disparities related to race, HIV status, and alcohol use. Strengthening with high performance tests, HPV vaccinations, timely follow-up, enhancing access to comprehensive, equitable health care are critical measures to eliminate CC in South Africa.

Keywords: cervical, cancer, screening, precancer, elimination

Cancer Survival For Rare And Common Cancers Based On The Japanese National Cancer Registry Data

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Background/ Purpose: To improve cancer control strategies for rare and poor-prognosis cancers, it is essential to classify cancers more precisely based on their distinct characteristics. We estimated cancer incidence and survival using a combination of topography and histological type, and examined the relationship between cancer rarity and survival outcomes.

Methods / Approaches: Based on the Japanese National Cancer Registry data, we analyzed 4,942,966 patients diagnosed with invasive cancer between 2016 and 2020. Cancer incidence and four-year net survival were estimated for 216 Tier-2 cancers, as defined by the RARECAREnet list, using the Pohar Perme estimator. In the survival analysis, patients aged 0–99 years were included. Those with unknown age or sex, or those identified by death certificate only, were excluded.

Results: Four-year net survival varied among common cancers with a crude incidence > 6 per 100,000—for example, 99.2% for prostate adenocarcinoma and 15.2% for pancreatic adenocarcinoma. Among rare cancers (crude incidence < 6 per 100,000), survival also varied widely—for instance, 98.5% for seminomatous testicular cancer and 3.4% for undifferentiated carcinoma of the liver and intrahepatic bile duct. Regardless of rarity or commonality, cancers that are detectable early due to symptoms or treatable with established therapies were associated with higher survival. In contrast, cancers that are asymptomatic, biologically aggressive, or typically diagnosed at advanced stages tended to have lower survival.

Conclusion: Classifying cancers by combining topography and histological type, as defined by the RARECAREnet list, is essential for identifying low-survival cancers that may be overlooked when cancers are classified by topography alone. This approach enables the development of more effective and targeted strategies for rare cancer control.

Keywords: rare cancer, common cancer, net survival, incidence, prognosis

Sixty Years Of Monitoring Childhood And Adolescent Cancer Survival In Slovenia

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Background/ Purpose: Limited research has been conducted on long-term survival among children and adolescents diagnosed with cancer. Our objective was to examine population-level survival trends over a 60-year period and to evaluate the suitability of the Pohar-Perme survival estimator for long-term survival analysis compared to observed survival.

Methods / Approaches: From the Slovenian Cancer Registry, we extracted and cleaned data on cancer cases (excluding cases of non-melanoma skin cancer) in children and adolescents aged 0–19 years diagnosed in Slovenia in 1964–2023 and followed up until December 31, 2024. Survival estimates were performed using the Kaplan-Meier estimator for observed survival and the nonparametric Pohar-Perme estimator for net survival.

Results: Of the total 4,065 cancer cases, 3,934 cases of first primary cancer were included in the survival analysis. A steady increase in the crude incidence rate was observed over the 60-year period - from 11.0 per 100,000 in the period 1964–1973 to 17.7 in 2014–2023. The observed five-year survival rate was 30.8% (27.3−34.8%) in the period 1964–1973 and steadily increased to 87.8% (85.3−90.3%) in the period 2014–2023. The five-year observed survival in the period 2014–2023 was worst for children diagnosed at the age of 0–4 years (84.5%, 79.6–89.7%) and best for adolescents diagnosed at the age of 15–19 years (90.2%, 86.3–94.2%). The differences between the observed and net survival rates were very small, with a difference exceeding 1 percentage point for survival of 30 years or more. However, even for survival of 50 years, the differences did not exceed 4 percentage points and the confidence intervals overlapped.

Conclusion: During the 60-year period, the observed five-year survival rate among Slovenian children and adolescents improved significantly, which is comparable to other high-income countries. Up to 30 years after cancer diagnosis, the estimated observed and net survival differs by only 0.2 percentage points.

Keywords: childhood and adolescent, cancer, long-term, survival, population-based

Twelve Labours To Better Find, Access And Utilize Linked Cancer Registry Data: Results From Heracles

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Background/ Purpose: Increasingly complex data are required to generate insights to keep cancer care accessible. Therefore, cancer registry data is often linked or pooled. Data requests may be cumbersome, while societal concerns about privacy and control of personal data are growing. Emerging technologies and data governance may facilitate access to health data and understand their utility. Further, they may mitigate privacy concerns and promote trust.

Methods / Approaches: Through the public-private partnership HERACLES, a large national consortium of created a playbook for a cancer data space, where observational FAIR cancer data can be discovered, requested, linked and analysed. Requirements are collected through two use cases involving linked data, focusing on early diagnosis of lung cancer and predicting recurrence of ovarian cancer. Innovative data space and privacy-enhancing technologies (PETs) are deployed to facilitate the journey from data discovery to analysis.

Results: Following conventional data request processes at the data holders, the data were linked and released. Crucial challenges relating to data quality, availability and coverage are identified, leading to prediction models with modest results. Requirements were collected for a Dutch national cancer data space. By deploying modern data space element in (meta-)data discovery, quality assessment and redesigning the data request process, researchers can understand the utility of linked data, cohort size upfront, while benefiting from efficient data delivery. Appropriate deployment of PETs can be realised, even for complex analyses.

Conclusion: Modern health data spaces provide an important opportunity to improve the access and utilization of (linked) health data in research – in particular for cancer registries. International cancer registries may increase their visibility, utilization and impact by engaging in data space initiatives. The adoption of PETs is resisted, yet it may be a crucial element for sustainability of cancer registries. The playbook developed in HERACLES offers concrete directions, particularly for multi-source analyses.

Keywords: linkage, privacy, innovation, governance, FAIR

Benchmarkiıng Childhood Cancer Care: Empowering Population Based Cancer Registries Through The Benchista Project

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Background/ Purpose: Geographic disparities in childhood cancer survival persist across Europe, driven in part by differences in stage at diagnosis. However, inconsistent staging practices have limited the ability to compare outcomes internationally. The BENCHISTA project addresses this challenge by applying the Toronto Staging Guidelines (TG)—the international standard for staging childhood solid tumors—to data from population-based cancer registries (PBCRs). This standardized approach enhances the comparability of survival estimates and supports efforts to identify additional prognostic factors beyond stage.

Methods / Approaches: We estimated 3-year survival for six major pediatric solid tumors—medulloblastoma (MB), neuroblastoma (NB), Wilms tumor (WT), Ewing sarcoma (ES), osteosarcoma (OS), and rhabdomyosarcoma (RMS)—diagnosed between 2014 and 2017 in children and adolescents across 23 European countries, including Italy. PBCRs reconstructed stage at diagnosis using TG and contributed data for 9,634 cases (840 from Italy). Survival was analyzed using the Kaplan-Meier method, and the proportion of metastatic cases was assessed to interpret geographic variability. In Italy, linkage between PBCRs and Italian Neuroblastoma Registry (RINB) was implemented to improve data quality.

Results: Linkage between RINB and PBCRs increased stage completeness from 81% to 99% and additionally, RINB's follow-up completeness improved from 59% to 99%. Italy’s survival rates were comparable to European averages: WT:92% vs 95%, NB:88% vs 83%, MB:78% vs 79%, ES:76% vs 77%, RMS:71% vs 76%, OS:76% vs 75%. OS showed the highest variability in metastatic case proportions, particularly in Eastern Europe. While stage at diagnosis remains a key prognostic factor, it does not fully explain survival differences.

Conclusion: This study highlights the critical role of PBCRs in international benchmarking. Standardized staging and national data linkage—connecting cancer registries with hospital records, pathology, and mortality data—enhance data completeness and comparability. These efforts are essential for sustainable integration into global initiatives like BENCHISTA and for promoting equitable, evidence-based pediatric oncology care across regions.

Keywords: Toronto Staging Guidelines, Childhood Cancer Survival, Benchmarking Study, Geographical Disparities

Global Trends In Kidney Cancer: Globocan 2022 Estimates Of Incidence And Mortality

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Background/ Purpose: Although some studies have suggested that kidney cancer rates vary internationally, largely due to differences in diagnosis and treatment, they have not covered countries and regions comprehensively. We examined global patterns and trends in kidney cancer incidence and mortality, focusing on potential causes.

Methods / Approaches: We used GLOBOCAN 2022 data to compare age-standardised rates of kidney cancer incidence and mortality, as well as their trends, estimated as the average percentage change over the last 15 years in 185 countries or territories worldwide.

Results: Incidence rates varied 10-fold across geographical areas in 2022. Age-standardised incidence rates ranged from 1.6 per 100,000 in low human development index countries to 12.6 in high human development index countries among men, and from 1.1 to 5.9 among women. Globally, the male-to-female ratio for incidence was 2.0. Overall, the incidence of kidney cancer was higher in North America, South America, Europe and Australia/New Zealand and lower in Africa and Asia, with similar geographical patterns for men and women. While the patterns were similar for mortality, the variation was less pronounced. Trends varied markedly during the most recent 15-year period: in very high human development index countries, incidence increased or stabilised while mortality decreased. In contrast, incidence and mortality rates increased in Latin America and some European countries (Portugal, Romania, and Moldova). Data were still unavailable for many low- and middle-income countries.

Conclusion: Substantial global variations in the incidence of kidney cancer are likely to be explained by the known risk factors, e.g. smoking and obesity, coupled with access to diagnostics. Unequal access to treatment likely explains mortality trends, especially increasing mortality in

Latin America and some European countries. Established risk factor prevention and access to effective treatment remain instrumental to kidney cancer control.

Keywords: kidney cancer, incidence, mortality, trends

Trends In The Diagnosis Of Prostate Cancer In Ireland By Type Of Care Provider.

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Background/ Purpose: To examine trends in prostate cancer incidence and the distribution of diagnoses across healthcare providers in Ireland before and after the introduction of Rapid Access Clinics (RACs) in 2010.

Methods / Approaches: Data from the National Cancer Registry of Ireland (NCRI) were used to estimate prostate cancer incidence in the Republic of Ireland between 2002 and 2022. Patients were characterised by median age and stage at diagnosis. Trends in the number of cases diagnosed were analysed before and after the implementation of RACs, with comparisons made across public hospitals, private hospitals, and cancer centres.

Results: In 2002, the median age of diagnosis for prostate cancer was 71.2 years (72.3 in cancer centres; 72.7 in public hospitals; 66.9 in private hospitals). By 2022, the median age had decreased to 68.3 years (67.0 in cancer centres; 73.0 in public hospitals; 68.8 in private hospitals). The proportion of diagnoses in public hospitals decreased from 48.2% in 2002 to 13.3% in 2022, while diagnoses in private hospitals increased from 20.8% to 41.4%, and in cancer centres from 31.0% to 45.2%. Regarding stage, in 2010, 1332 cases (40.2%) were diagnosed at stage I (897 stage II; 422 stage III; 314 stage IV; 346 unstaged). By 2020, 1672 cases (44.8%) were diagnosed at stage I (755 stage II; 580 stage III; 426 stage IV; 299 unstaged). Between 2010 and 2020, the number of stage I diagnoses increased significantly, with an average annual percentage change of 3.2%.

Conclusion: The introduction of RACs has reshaped the diagnostic pathway for prostate cancer in Ireland. While they have improved centralisation within the public sector, a growing proportion of diagnoses occur in the private sector. Importantly, there has been a marked shift towards earlier detection, with a significant increase in stage I diagnoses, highlighting the impact of RACs.

Keywords: Prostate, Rapid Access Clinics, Stage, Diagnostic pathway, Early detection

Cancer Survival For Selected Cancers In Türkiye (2010-2017): A Population-Based Study

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Background/ Purpose: Cancer survival is a critical metric for evaluating the effectiveness of cancer treatments and the overall quality of cancer care within a population. In this study, we aim to investigate regional variation in cancer survival for selected cancers in Türkiye.

Methods / Approaches: We utilised data for patients diagnosed with five most common cancers (lung, breast, colon, prostate, and thyroid) from eight population-based cancer registries in Türkiye (Antalya, Bursa, Edirne, Erzurum, Eskisehir, Izmir, Samsun, and Trabzon) during 2010-2012 (SURVCAN-3) and during 2013-2017 and followed up until Dec 2020 (SURVCAN-4). Both observed and age-standardised net survival at 5 years after diagnosis were calculated.

Results: Five-year net survival increased by 1-2 percentage point difference across population-based cancer registries in nearly all provinces in Türkiye between the two study periods. At the regional level, Trabzon and Antalya reported the highest survival for most cancer sites (e.g. 89% and 88% for breast cancer respectively), while Erzurum and Edirne showed lower survival for most cancers. Thyroid cancer consistently showed the highest survival, exceeding 88% in all provinces for both periods. Lung cancer had the lowest 5-year survival estimates across all regions, with Edirne reporting the lowest survival at approximately 10% in both periods. The largest improvements in survival between 2010–2012 and 2013–2017 were observed for prostate cancer in Antalya (from 87% to 96%), for breast cancer in Erzurum (from 68% to 75%) and Antalya (from 81% to 88%), and for colon cancer in Eskisehir (from 53% to 59%) and Antalya (from 58% to 62%).

Conclusion: While survival for most common cancers in Türkiye has improved, further efforts are needed to address regional disparities. Our results provide valuable insights to improve health system performance and inform policy decisions across the provinces in Türkiye.

Keywords: Cancer survival, Population-based, Türkiye

Country Based Risk Assessment of Subsequent Primary Neoplasms After Childhood Cancer: the CRICCS study results

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Background/ Purpose: Improved childhood cancer survival leads to a growing population at risk for late effects, including subsequent primary neoplasms (SPNs). Cancer registries can play a crucial role in quantifying the SPN occurrence. Within the CRICCS (Cancer Risk in Childhood Cancer Survivors) study, we aimed to estimate the overall risk of SPNs after childhood cancer diagnosis using data from countries with wide socioeconomic diversity, as a basis for developing effective control strategies.

Methods / Approaches: We included 60,524 childhood cancers followed-up in 11 countries through 3 national and 21 regional registries. The Risk of SPNs was defined by standardised incidence ratios (SIR) and stratified by country.

Results: The observed 1,687 SPNs after childhood cancer, corresponded to overall SIR of 3.2 (95%CI:3.1–3.3), indicating threefold increase in developing a cancer in survivors, compared to general population. SIR was highest in Belgium at 6.8 (95%CI:6.1-7.7), followed by the UK (Northern Ireland registry) with SIR of 5.5 (95%CI:4.6–6.7), Slovenia with 5.3 (95%CI:4.7–6.0) and Italy with 5.0 (95%CI:4.5–5.5). Other European countries, including Ireland, Russia and Spain, also demonstrated elevated SIRs ranging from 3.1 to 4.1. Outside of Europe, Australia reported SIRs of 3.8 (95% CI:3.6–4.2). Canada, with the largest cohort (N=13,005) and the highest absolute number of SPNs (N=586) had a comparatively lower SIR of 2.2 (95%CI:2.1–2.3). In Latin America, Ecuador and Colombia exhibited the lowest SIRs, 2.1 (95% CI:1.6–2.8) and 2.2 (95%CI:1.1–4.5), respectively; although significantly elevated compared to the general population.

Conclusion: SPNs pose serious health challenges, underscoring the need for long-term surveillance. Registries' role is essential for evaluating risk factors and informing evidence-based follow-up strategies. Strengthening registry infrastructure, especially in middle-income countries, is key to improving data completeness and supporting international comparative research. The knowledge created from long-term follow-up surveillance after childhood cancer allows health system to plan better prevention policies.

Keywords: childhood cancer, late-effects, subsequent primary neoplasm

Incidence of Common Cancers in Georgia in 2015–2019: A National Cancer Registry Study

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Background/ Purpose: Cancer is the second leading cause of death worldwide, including in Georgia. This study aimed to evaluate the number of new cancer cases, identify the most common cancer sites, analyze sex differences, and evaluate age-standardized rates (ASR) and age-specific rates from 2015 to 2019 in Georgia.

Methods / Approaches: We used the National Cancer Registry of Georgia and the National Statistics Office of Georgia population data. ASRs per 100,000 population were calculated using the direct standardization method, with the WHO's world standard population as a reference.

Results: Between 2015 and 2019, 50,098 cancer cases (ICD-10 codes C00-96 exc. C44) were diagnosed in Georgia, including 21,802 in men (ASR 175.5/100,000) and 28,296 in women (ASR 192.8/100,000). Among men, the most common cancer sites were lung (16%, ASR 28.0/100,000); prostate (14%, ASR 22.0/100,000); bladder (10%, ASR 16.3/100,000); colorectal (10%, ASR 16.2/100,0000); and larynx (6%, ASR 10.9/100,000). Among women, the most common cancer sites were breast (34%, ASR 64.5/100,000), thyroid (14%, ASR 34.3/100,000), colorectal (7%, 10.3/100,000), cervix (6%, ASR 12.6/100,000) and corpus uteri (6%, ASR 11.4/100,000), respectively.

Conclusion: This is the first comprehensive evaluation of cancer incidence in Georgia. Beyond sex-specific cancers such as breast and prostate, lung cancer was more common in men, while thyroid cancer was more common in women. The overall cancer incidence in Georgia was lower than the 2022 GLOBOCAN-estimated ASR for the 27 EU countries. Differences in healthcare infrastructure, screening uptake, or reporting accuracy may explain these disparities.

Keywords: Cancer; Incidence rate; Cancer Registry; Georgia.

The Proportions Of Cancers Associated With Modifiable Risk Factors In Luxembourg

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Background/ Purpose: Cancer burdens are increasing in Europe and globally. Luxembourg is notable regarding rising cancer incidence linked with demographic changes. From 2011-2021, Luxembourg underwent the greatest proportional increase in population size within the European Union.

Methods / Approaches: Population attributable fractions (PAFs) were calculated through data concerning Luxembourg’s 15+ years of age population from STATEC (National Institute of statistics and economic studies of the Grand Duchy of Luxembourg), findings from the European Health Interview Survey (EHIS) 2019 wave based in Luxembourg, and lung and colorectal cancer data from the National Cancer Registry of Luxembourg incident in 2019. Additionally, STATEC furnished Luxembourgish communes’ population sizes and socioeconomic circumstances. Smoking and body mass index (BMI)-based risk factors were obtained from two 2019 EHIS factsheets and Luxembourg’s National Cancer Registry. PAFs were calculated for intersections of risk factors with cancer types with sufficient/convincing evidence of considerable associations. Furthermore, analyses were stratified by gender and lung and colorectal cancer subtypes. We are currently studying the effects of air pollution based on data from the European Monitoring and Evaluation Programme Meteorological Synthesizing Centre-West and the Air Quality e-Reporting platform of the European Environment Agency.

Results: PAF results showed that smoking accounts for a substantial aetiological fraction of lung cancer. BMI (kg/m²) was divided into three categories (normal=BMI < 25, overweight=$25 < \text{BMI} < 30$, and obese=BMI > 30) and a PAF revealed that higher BMI increases colorectal cancer risk. While less advantaged commune-level socioeconomic circumstances raise risks of lung and colorectal cancers, more advantaged commune-level socioeconomic circumstances slightly raise risk of all cancers. Results also reveal differences by gender and lung and colorectal cancer subtypes.

Conclusion: The insights here revealed may support national primary prevention efforts to tailor prevention messages. They further reinforce understandings of cancer aetiology specific to cancer types. Further studies should be conducted to support this study’s insights.

Keywords: lung cancer, smoking, body mass index, colorectal cancer, contextual risk factors

Diverging Trends In Early- And Late-Onset Gi Cancers: Global Patterns And Projections To 2040

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Background/ Purpose: The global burden of gastrointestinal (GI) cancers is evolving, with growing concerns about the rising incidence among younger adults. However, cross-country comparisons of early-onset (< 50 years) and late-onset (≥50 years) GI cancer trends and future projections remain limited.

Methods / Approaches: Using data from Cancer Incidence in Five Continents Volumes VIII-XII, we analyzed age-standardized incidence rates for six major GI cancers, esophageal cancer (EC), gastric cancer (GC), colorectal cancer (CRC), liver cancer (LC), gallbladder cancer (GBC), and pancreatic cancer (PC), in 29 countries, stratified by sex, country, and age at onset. Trends were quantified using annual percentage change (APC). Incidence to 2040 was projected using the age-period-cohort model, calibrated to CI5 Volume XII data.

Results: From 1993 to 2017, early-onset GI cancers increased in many countries, notably for CRC (10 countries; fastest in Norway: APC 2.42, 95% CI 0.22-4.92), LC (6 countries; Ireland: 5.16, 0.76-12.11), and PC (5 countries; France: 3.16, 2.25-4.18). Despite declines in early-onset EC and GC in half the countries, GC remained among the top two types in 25 countries. Late-onset CRC, LC, and PC increased in 10, 18, and 16 countries, respectively, while EC, GC, and GBC declined in 8, 26, and 10 countries. Diverging trends by age were evident; for instance, late-onset CRC declined while early-onset CRC rose in Canada, New Zealand, and the USA. By 2040, CRC is projected to remain the leading GI cancer, with PC rising to second in 18 countries. LC is expected to surpass GC in several very high-HDI countries, and GBC may exceed EC in older adults in 12 countries.

Conclusion: These findings reveal a global epidemiologic transition in GI cancers, marked by age-specific divergence and growing early-onset burdens. Urgent attention is needed to develop age-tailored prevention, surveillance, and early detection strategies, particularly in countries facing rapid increases among younger populations.

Keywords: early-onset, late-onset, gastrointestinal cancer (GI cancer), projection, global trend

Automated Coding For Cancer Diagnosis Using Large Language Models: A Panel Study In China

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Background/ Purpose: Cancer diagnosis coding serves as the cornerstone of cancer registry (CR), traditionally executed by trained coders or clinical personnel. However, in China, coding accuracy remains unsatisfied, largely due to insufficient training of local staff. Large language models (LLMs) powered by artificial intelligence (AI) offer a promising solution to improve coding quality at scale.

Methods / Approaches: We randomly extracted 145 lung cancer and 150 breast cancer cases from national CR dataset. Each case included detailed pathological diagnostic information. A senior coder and a pathologist specialized in the respective cancer types were recruited to independently perform ICD-10 and ICD-O-3 coding. Discrepancies between the two were resolved through consensus discussions. The final expert-coded results served as the gold standards. We then evaluated 11 LLMs, generating automated codes. The accuracy of LLM-generated codes was compared against the original CR staff coding.

Results: Among 11 LLMs evaluated, Doubao 1.5 Thinking Pro and DeepSeek R1 achieved the highest coding accuracy for lung and breast cancer, respectively. For lung cancer cases, LLM outperformed original staff coding in ICD-10 (97.9% vs 83.5%) and ICD-O-3 (topography: 98.6% vs 84.8%, morphology: 92.4% vs 81.4%, behavior: 99.3% vs 99.3%, grade: 72.4% vs 66.9%). For breast cancer cases, LLM exhibited lower accuracy in ICD-O-3 topography (88.7% vs 92.0%) coding, whereas LLM outperformed staff coding in ICD-10 (88.0% vs 87.3%) and ICD-O-3 morphology (97.3% vs 75.3%), behavior (98.7% vs 96.7%) and grade (94.7% vs 68.0%) classification.

Conclusion: Our findings highlight the need for cancer type-specific model optimization. The superior performance of Doubao 1.5 Thinking Pro and DeepSeek R1 may be attributed to their pretraining on Chinese medical corpora. With targeted training on medical coding rules, AI-assisted coding systems hold strong potential to improve the accuracy and efficiency of cancer registry coding, particularly when parsing unstructured Chinese pathological text data.

Keywords: cancer registry, automated coding, artificial intelligence, large language model, China

Central Nervous System Tumors In The Veneto Region, Italy: Incidence, Treatment And Survival By Histotype

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Background/ Purpose: Data on survival and follow-up of CNS tumors by histotype remain limited. Our study assessed the incidence, treatment, and survival of Central Nervous System (CNS) tumors in the Veneto Region (North-eastern Italy), with a focus on the most prevalent histologic types.

Methods / Approaches: We included all CNS tumor cases occurred in adults resident in the Veneto Region (4.9 million inhabitants) and recorded by the Veneto Cancer Registry between 2016 and 2020. We developed a specific text-mining procedure to extract tumor grade from textual diagnosis of pathology reports. Using healthcare administrative data, the most frequent cancer types were analyzed in terms of incidence, treatment (surgical procedures, chemotherapy, radiotherapy), and survival.

Results: Between 2016 and 2020, 2,824 cases of malignant CNS tumors and meningioma (grade 2-3 according to the WHO 2016 classification) occurred in the Veneto Region, with a higher incidence in men and in over 70 years patients (45.2%). The most common tumor types were glioblastomas (n = 1,056, 62.2%), meningiomas grade 2-3 (298, 17.6%), and astrocytomas grade 2-3 (154, 9.1%). Incidence rate for CNS tumors was 12.5/100,000 inhabitants: 5.2/100.000 for glioblastomas, 0.8/100.000 for astrocytomas and 1.5/100.000 for meningiomas. There was a predominance of high-grade tumors, with nearly two-thirds (65.5%) of cases classified as grade 4. The majority of patients (80.5%) had only one surgery, whereas 10.1% had only a biopsy and 9.3% underwent more than one surgical procedure; 12.9% received only chemotherapy, 8.6% only radiotherapy, 46.6% both therapies, and 32% no therapy. Five-year relative survival was 5.7% for glioblastoma, 67.7% for astrocytoma grade 2, 30.5% for astrocytoma grade 3, 87% for meningioma grade 2 and 34.3% for meningioma grade 3.

Conclusion: Our research improved knowledge on clinical pathways and survival of patients with CNS tumors, focusing on the histotype and providing significant evidence for bettering their long-term care and management.

Keywords: Central Nervous System, Incidence, Treatment, Survival, Veneto Cancer Registry

Tracking Cancer Transition in India: A Compositional Perspective Using Population Based Cancer Registries (1982-2012)

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Background/ Purpose: As India undergoes demographic and epidemiologic transitions, notable shifts in the cancer patterns have emerged. Understanding these shifts is vital for guiding targeted cancer control efforts. This study examines changes in the incidence patterns of cancer in India.

Methods / Approaches: This study investigates the temporal shift in the composition of cancer incidence in two major registries—Mumbai and Chennai— from 1982–2012) for male and female, using the methodological framework of Compositional Data Analysis. Cancer types were grouped into three mutually exclusive categories: 1)infectious-related origin ; 2)tobacco-related ; and 3)non-tobacco lifestyle-related cancers. Their relative proportions were calculated, centered log-ratio(clr) transformation was used to analyze trends over time, and ternary plots and Principal Component Analysis were used for visual and statistical interpretation.

Results: Among males, tobacco-related cancers dominate(center = 0.6506), significantly higher than infectious(0.1814) and lifestyle-related(0.1680) cancers. The low clr variance for tobacco(0.0148) suggests a stable burden over time. In females, there's a clear transition from cervical (infectious) to breast (lifestyle-related) cancer. This is reflected in similar clr centers and variances for both groups, with higher variability in lifestyle cancers pointing to a more dynamic shift. Mumbai shows greater variability in cancer profiles, largely due to tobacco-related cancers, while Chennai displays a more stable pattern with a higher burden of infectious cancers, particularly cervical. Principal Component Analysis (PCA) reveals two key trends: PC1 (86.5% variance) captures the main transition from tobacco to lifestyle-related cancers (tobacco: -0.8149; lifestyle: 0.4515), while PC2 (13.5%) highlights the shift from cervical to breast cancer in females.

Conclusion: This compositional lens reveals that while tobacco-related cancers consistently burden males, females show a dual—and possibly transitional—burden from cervical to breast cancer. Compositional Data Analysis techniques, through clr transformation and PCA, elucidate these subtle shifts by capturing the proportional dynamics, calling for differentiated, site- and sex-sensitive interventions in India's evolving cancer control framework.

Keywords: Cancer transition, Compositional Data Analysis, Mumbai, Chennai, PBCR

Trends and Predictions of the Burden of Malignant Tumors in Yunnan Province

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Background/ Purpose: Yunnan Province is located in the southwestern part of China, with a land area of 394,000 square kilometers and a permanent resident population of 46.73 million people. This study aims to understand the current situation of the burden of malignant tumors among residents and the trends from 2016 to 2021, and to predict the disease burden from 2022 to 2025, in order to provide references for the formulation and evaluation of cancer prevention and control strategies.

Methods / Approaches: Data on the incidence and mortality of malignant tumors from 16 cancer registration areas in Yunnan Province that met the quality standards from 2016 to 2021 were summarized to calculate the world-standardized rates, YLL rates, YLD rates, and DALY rates. The Joinpoint model was used to analyze the trends in disease burden from 2016 to 2021, and the GM (1,1) grey model was used to predict the changes in disease burden from 2022 to 2025.

Results: From 2016 to 2021, the world-standardized incidence rate of malignant tumors in Yunnan Province was 142.48 per 100,000, the world-standardized mortality rate was 80.10 per 100,000, the DALY rate was 18.04‰, the YLL rate was 17.71‰, and the YLD rate was 0.34‰. The world-standardized incidence rate (APC=-0.63%, P=0.043), world-standardized mortality rate (APC=-3.25%, P=0.008), and DALY rate (APC=-1.68%, P=0.015) showed a downward trend over the years and continued to decline from 2022 to 2025, decreasing from 140.62 per 100,000, 69.75 per 100,000, and 18.57‰ in 2022 to 139.60 per 100,000, 61.31 per 100,000, and 17.65‰ in 2025 respectively.

Conclusion: Excluding the impact of population aging, the disease burden has shown a yearly downward trend over the past six years and is expected to continue to decline over the next four years, indicating that the cancer prevention and control efforts in Yunnan Province have been effective.

Keywords: Yunnan; Malignant tumor; Disease burden; Trend; Prediction

Effect Of Organized Breast Cancer Screening Program On Incidence And Mortality In China

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Background/ Purpose: To estimate the effect of breast ultrasonography (BUS) in parallel with mammography (MAM) screening in prevention of breast cancer in China.

Methods / Approaches: This community-based multicentre cohort study was conducted in Hebei Province, China between 2013 and 2023, recruiting residents aged 40 to 74 years who were asymptomatic for breast cancer with no cancer history. Participants assessed as high-risk by risk scores were classified into screened and non-screened groups on the basis of whether or not they had the screening. The effect of the breast cancer screening programme were evaluated by comparing reductions in breast cancer mortality and all-cause mortality in the screened with non-screened group. Inverse probability weighting was adopted to account for potential imbalanced factors between groups and Cox proportional hazards model was used to estimate the weighted associations between mortality and breast screenings.

Results: Between Feb 19, 2013, and Oct 31, 2023, 197,959 participants were enrolled in the study, of whom 61,567 in the invited to screening group, 32,514 (52.8%) of whom were screened eventually. Overall, 1142 breast cancer cases and 2076 all-cause death cases (157 breast cancer death cases) were traced after a median follow-up of 5.8 years [IQR, 3.7-11.1]. Compared with subjects in the non-screened group, breast cancer screening increased breast cancer incidence by 15% (hazard ratio [HR] 1.15, 95% CI 0.94-1.42; P=0.175) but reduced breast cancer mortality by 34% (HR 0.66, 95% CI 0.33-1.34; P=0.054) and all-cause mortality by 21% (HR 0.79, 95% CI 0.66 to 0.95; P=0.014) in the screened group, respectively.

Conclusion: Among individuals aged 40 to 74 years in China, BUS in parallel with MAM screening programme was associated with a significant decrease in breast cancer mortality and all-cause mortality. Further efforts are needed to determine the optimal screening interval and age, identify high risk individuals and provide evidence for precise and individualized screening.

Keywords: Breast cancer, Screening, Cohort

Effect Of Who's Guidelines For Covid-19 Mortality Coding On Underreporting Of Cancer Deaths In Slovenia

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Background/ Purpose: On April 16 2020, the WHO published "International guidelines for certification and classification (coding) of COVID-19 as cause of death", which remain in effect. The guidelines were adopted by the Slovenian National Institute of Public Health (NIJZ), which is responsible for coding underlying causes of death based on death certificates in Slovenia. Our aim is to assess the impact of new coding rules on cancer mortality statistics.

Methods / Approaches: Two datasets were available for this research: the official cancer mortality data coded according to updated WHO guidelines and a corrected dataset in which cancer was retained as the underlying cause using the former coding rules. We estimated the number of cancer deaths potentially underestimated due to the change in coding practices and analysed the characteristics of cases where cancer was not coded as the underlying cause because of coding change (this group is called "COVID-19 deaths").

Results: The group "COVID-19 deaths" increased steadily from 2020 to 2022, both numerically (from 462 to 662) and as a proportion (from 7.2% to 10.4%), followed by a drop in 2023 (163, 2.4%). Among people who officially died of cancer, 42.4% were aged 65−79 and 38.0% were 80+, while corresponding percentages in the group "COVID-19 deaths" were 43.2% and 41.5%. Men comprised a higher proportion of "COVID-19 deaths" (61.0%) than official cancer deaths (56.6%). The largest proportion of cases coded as COVID-19 according to the new guidelines was in leukaemia (2020−2022 average is 16.3%), lymphoma (15.6%) and non-melanoma skin cancer (13.5%).

Conclusion: Modified coding practices underestimated cancer mortality by 6.9% in 2020–2022 in Slovenia. In Slovenia population-based cancer registries reported a decline in cancer incidence during the pandemic years. Identifying the distinct factors contributing to reduced incidence and mortality is essential for accurate assessment of cancer burden in the pandemic context.

Keywords: cancer mortality, COVID-19 pandemic, cancer burden

Lung Cancer in Never Smokers: A Population-Based Analysis Using Florida Cancer Registry Data

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Background/ Purpose: Lung cancer in never smokers (LCNS) is increasingly recognized as a distinct clinical and epidemiological entity. However, its characterization remains limited by incomplete smoking data in cancer registries and the lack of reliable population-based denominators for never- and ever-smokers.

Methods / Approaches: We analyzed all lung cancer cases diagnosed during 2014-2021 using the Florida Cancer Data System (FCDS), which collects smoking history data. FCDS records were linked to statewide hospital discharge data to identify comorbidities. Incidence trends were assessed using Joinpoint regression. Rates were estimated using National Health Interview Survey (NHIS) smoking prevalence data for appropriate denominators. Five-year age-adjusted cause-specific survival (AACSS) was calculated through passive follow-up to 2021.

Results: Among 141,411 lung cancer cases, 19,515 (13.8%) were never smokers. The median age at diagnosis was 73 years for never smokers and 71 years for ever smokers. LCNS ranked as the 11th most common cancer in men and 8th in women. Age-adjusted incidence rates varied modestly by race and ethnicity (15% range), with the highest rates observed in Black men and Asian women. Incidence remained stable over the study period (AAPC: -0.2%, p=0.92). While sex distribution was balanced at younger ages, LCNS became more common in men over age 65. Five-year AACSS was 37.5% (95% CI: 36.9–38.1%) for never smokers and 26.4% (95% CI: 26.2–26.7%) for ever smokers. After adjusting for age, sex, and race-ethnicity, ever smokers had a 25% higher risk of lung cancer mortality compared to never smokers (HR: 1.25, 95% CI: 1.23–1.27).

Conclusion: LCNS presents distinct demographic patterns and substantially better survival compared to lung cancer in ever-smokers. As smoking prevalence declines, LCNS represents a growing share of lung cancer cases. Improving the completeness of smoking history in cancer registries will be critical to advancing research, refining risk assessment, and developing targeted early detection and prevention strategies for this emerging patient population.

Keywords: lung cancer, Never Smokers, Epidemiology, Survival, Incidence

Estimating The Timing Of Ovarian Cancer Progression And Recurrence: Construction Of A Machine-Learning Algorithm Based On Population-Based Administrative Data

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Background/ Purpose: Progression and recurrence events after a primary cancer diagnosis are not actively or routinely registered in the Belgian Cancer Registry (BCR). We trained a machine learning algorithm to estimate the timing of the first progression episode (including recurrence) among ovarian cancer patients, using data from BCR and population-level administrative data.

Methods / Approaches: Data from all patients diagnosed with epithelial ovarian cancer during 2014-2018, were retrieved from BCR and linked with administrative records, including data on reimbursed medication and procedures (e.g. diagnostic and medical/surgical procedures, pathology), vital status and cause-of-death. A reference dataset was constructed through manual review of patient records in seven participating hospitals. A discrete-time modeling framework was used based on a XGBoost classifier in which the outcome was defined as the probability of a patient-month to be classified as post-recurrence. Features captured patterns in BCR and administrative data, including both retrospective and prospective temporal information at every patient-month.

Results: A total of 626 patients were included in the reference dataset, of which 61% had an observed first progression (74% among stage III-IV) within 60 months of follow-up. The model achieved high patient-level performance in 10-fold cross-validation in a training set (70% of the reference dataset, n=438) with a sensitivity and specificity at 0.94 (SD±0.05) and 0.87 (SD±0.09), respectively, and a positive predictive value of 0.91 (SD±0.05). Among true positive predictions, the mean timing error was 0.2 months (SD±5.4), with a mean absolute error of 2.3 months. Final

out-of-sample performance based on the test dataset (30% of reference data) and progression-free survival at population-level will be presented.

Conclusion: In the absence of active follow-up registration at the national level, automated data mining of administrative records available at population-level in Belgium can be a valuable alternative to estimate the timing of ovarian cancer progression and recurrence.

Keywords: machine-learning algorithm, cancer recurrence, cancer progression, cancer registration, ovarian cancer

Assisting Registrar Queries With Retrieval-Augmented Generation (RAG) During Cancer Registration

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Background/ Purpose: Cancer registries play a crucial role in the epidemiological surveillance of cancer. However, the registration process itself is labor-intensive, often requiring registrars to consult many multipage documents (e.g., regarding ICD coding) through a time-consuming document search process. To tackle this problem, we focus on using artificial intelligence (AI) to support and accelerate the registration process through a RAG chatbot architecture based on Large Language Models (LLMs).

Methods / Approaches: A chatbot solution was created according to the standard pipeline of RAG: first, sentence transformers were used to map chunks of the registration manuals into a vector database of embeddings. Later, the most similar chunk to the submitted query was retrieved, based on embeddings similarity, and used within the LLM prompt as background information. Sentence transformers were used to generate embeddings, while decoder-only models, such as the "Llama3" model, were used for text generation. The chatbot's graphical user interface was based on streamlit. Registration manuals of over 250 pages in total, intended for internal use in the Netherlands Comprehensive Cancer Organisation (IKNL), provided the input to the RAG pipeline.

Results: To evaluate the performance of the chatbot, different configurations of the RAG pipeline were tested, including: (i) chunking parameters (e.g., size of overlap), (ii) type of LLM (e.g., pre-trained with health-related data or not), (iii) prompt engineering (e.g., in-context learning by example). Standard knowledge quizzes accompanying the registration guides will be used as benchmark for model performance.

Conclusion: Given the volume of data is expected to increase along with the future cancer incidence worldwide, using RAG to assist registrars with registration document search has the potential to accelerate more efficient cancer registration. Potential challenges around the use of RAG with LLMs, including correct chunk retrieval, text hallucinations and computational scalability, are discussed.

Keywords: Large Language Models, Retrieval-augmented generation, Cancer registration, Registration manuals, Artificial Intelligence

Pooling Expertise And Resources To Build An Innovative Educational Legacy In The Carribbean: Savoır

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Background/ Purpose: The level of digital maturity in the Caribbean varies significantly from one territory to another and therefore its capacity for anticipation and resilience. Within the framework of the SAVOIR project supported by the Global Initiative for the Development of Cancer Registries (GICR) agreement, the project aims to continue capacity building to build a network of resource persons with expertise in massive data. One of the main objectives is to consolidate an active e-learning space, in support of partner educational communities in the cooperation zone, which included the strengthening of cancer registration systems in Caribbean countries.

Methods / Approaches: SAVOIR, organized as a scientific cluster, is helping to establish an ethical, deontological and regulatory framework for the exploitation of multilingual, massive and heterogeneous data in an insular context. This structuring is based on a pool of training courses and reference materials for experts, in line with the Europe 2020-30 digital strategy.

Results: The GICR Caribbean Hub at CARPHA, through the SAVOIR project, will promote research and innovation on priority themes in the LAC region. It will be a space for active online learning, knowledge and lifestyle, where training courses will be made up of theoretical modules and practical workshops. These courses will be accessible via a valuable networking platform with access to educational material on priority themes such as data processing, cybersecurity principles and regulatory frameworks for the use of massive data.

Conclusion: By pooling expertise and resources, SAVOIR aims to build an innovative educational legacy for a sustainable and resilient future. This articulation is closely linked to the objectives of

reducing the digital gap through the development of skills in artificial intelligence and massive data. Digital health professionals will be trained in this area, and support will be provided for the development of structuring projects for the Caribbean region.

Keywords: Caribbean Region, Common Data Elements, Big Data

Divergent Patient-Disease Characteristics, Treatment Patterns And Survival Outcome In De Novo Versus Metachronous Metastatic Breast Cancer: A Nationwide Comparative Study

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Background/ Purpose: To compare patient and disease characteristics, treatment patterns, and survival between patients with de novo and metachronous metastatic breast cancer (MBC) using nationwide data.

Methods / Approaches: In total 2,366 patients diagnosed with MBC (900 de novo and 1,466 metachronous) in 2019 were selected from the Netherlands Cancer Registry. Differences in patient- and tumor characteristics, and systemic treatment, were analyzed using chi-squared tests. Overall survival (OS) between both groups was compared using Kaplan Meijer curves and Cox proportional hazard analyses. All analyses were stratified by clinical subtype (HR+/Her2-, HR+/Her2+, HR-/Her2+, HR-/Her2-). For patients with HR+/Her2− tumors, a sub-analysis examined OS in de novo versus metachronous MBC, in which the metachronous group was stratified by receipt of prior (neo)adjuvant systemic treatment for the primary nonmetastatic breast cancer.

Results: Patients with de novo MBC were younger, presented more often with a HER2+ clinical subtype (22% vs. 11%) and bone-only metastases (33% vs. 23%). Less frequently, a HR-/Her2- subtype (11% vs. 16%) or CNS metastases (4% vs. 7%) were diagnosed. Among Her2+ MBC patients, chemotherapy and targeted therapy was more often administered in de novo versus metachronous MBC. Median OS was significantly longer in de novo MBC, with the greatest difference observed in HR−/Her2+ tumors (51 vs. 9 months). In HR+/Her2− patients, metachronous MBC patients who received prior (neo)adjuvant systemic treatment had a worse OS compared to those with de novo MBC, while those without prior (neo)adjuvant treatment had comparable outcomes.

Conclusion: De novo and metachronous MBC have different tumor biology, treatment patterns, and survival outcomes. In metachronous MBC patients, patients who received prior (neo)adjuvant systemic treatment due to a more advanced primary tumor, have a worse survival compared to patients who present with de novo MBC or patients with metachronous MBC who did not receive prior (neo)adjuvant systemic treatment.

Keywords: Comparative analysis, Nationwide, de novo vs. metachronous metastatic breast cancer, Prognosis, Treatment patterns

Uneven Progress in Global Liver Cancer Control: Evidence Based on 10-Year Analysis Across 42 Countries by Age and Sex

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Background/ Purpose: Liver cancer is the sixth most common malignancy worldwide, with high invasiveness and a five-year survival rate below 30%. Liver cancer is highly preventable, and prevention is its most cost-effective intervention. However, existing studies lack international quantitative comparisons of incidence trends between countries. We aim to systematically evaluate trends in liver cancer incidence overall and by sex and age across 42 countries with high-quality population-based cancer registration data.

Methods / Approaches: We used incidence data for primary invasive liver cancer (ICD-10 code C22) from the Cancer Incidence in Five Continents Time Trends (CI5plus) database, which includes continuous cancer registration data meeting strict data quality criteria between 2008 and 2017. We estimated trends in age-standardised rate of incidence by calculating the average annual percent change (AAPC) for each country overall and by sex and age. Statistically significant increasing or decreasing trends were defined as 95% confidence intervals (CI) ranges not including 0.

Results: From 2008 to 2017, the age-standardised incidence rates rose in 26 of the 42 countries, mainly in Europe and the Americas, such as Norway and the USA. Rates declined in 16 countries, most notably in East Asia and West Asia, such as China and Israel. Poland had the fastest increase (AAPC: 7.17%; 95% CI: 3.97% to 10.47%), while Kuwait showed the fastest decrease (AAPC: -3.88%; 95% CI: -8.12% to -3.18%). Among the countries with rising rates, men aged 50 and above experienced the fastest increase. In countries with declining rates, men aged 0-49 showed the most rapid decrease.

Conclusion: Liver cancer is highly preventable, yet progress remains uneven globally. Prevention and control strategies must be tailored to each country's specific local context.

Keywords: prevention and control, liver cancer

Cervical Cancer In A High-Income Jurisdiction: What's New? A Randomized Trial Of Hpv Vaccination Invitations

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Background/ Purpose: Despite the World Health Organization’s (WHO) goal to eliminate cervical cancer by 2030, challenges persist – even in high-income regions. We routinely use data from the Manitoba Cancer Registry to monitor cervical cancer in our Canadian province and to inform cancer control efforts.

Methods / Approaches: Joinpoint was used to analyze cervical cancer incidence data (2000-2023) from the Manitoba Cancer Registry. In parallel, we undertook a randomized trial to evaluate the impact of invitation letters on HPV vaccination uptake among women aged 20 to 26 who had not been immunized. Three groups of 4,650 young women were assigned to one of three arms: HPV vaccine invitation letter, HPV vaccine invitation letter + reminder letter six weeks later, or no HPV vaccine-related correspondence. Vaccine uptake was measured at 6 and 12 months; differences by rural-urban residence were also explored.

Results: Cervical cancer incidence in Manitoba has continued to rise through 2023, with a +9.87 annual percent change (APC) ($p < 0.05$) in the number of women diagnosed with invasive cervical cancer since 2018 and a non-significant +8.34 APC in age-standardized rates. HPV immunization reminder letters showed a significant effect on vaccination: at 6 months, 4.0% of individuals in the invitation/reminder and 2.5% of individuals in the invitation only group had one dose of the HPV vaccine – a relative risk (RR) of 4.9 (95% CI: 3.4–6.9) and 3.0 (95% CI: 2.1–4.4) respectively compared to controls. The significant effect persisted at 12 months but the benefit decreased (RRs 3.2 (95% CI: 2.5–4.2) and 2.3 (95% CI: 1.7–3.0) respectively). The effect was more pronounced for urban vs rural residents.

Conclusion: Despite ongoing prevention efforts, cervical cancer incidence continues to rise in Manitoba, highlighting the need for new strategies. Invitation letters including HPV vaccination reminders for unimmunized young women may be one tool for cervical cancer control.

Keywords: cervical cancer, HPV immunization, mailed invitation campaign, randomized trial

Impact of Smoking History on Population-Based Lung Cancer Survival in İzmır, 2010–2019

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Background/ Purpose: This study aimed to evaluate the prognostic impact of smoking status at the time of diagnosis on overall survival in lung cancer, along with age, sex, diagnosis period, histological subtype, and stage.

Methods / Approaches: From 23 757 cases in the Izmir Population Based Cancer Registry (2010–2019), we retained 19 444 patients aged ≥30 after excluding in situ and unknown stages. Histology was grouped as small-cell (17.5%) or non-small-cell (82.5%). Smoking status at diagnosis was current (n = 4 046; 66.1%), never (n = 289; 4.7%), and former (n = 1 786; 29.2%). Follow-ups totaled 25 936.1 person-years. Overall survival was estimated via Kaplan–Meier method. Two multivariable Cox models—excluding unknown stages—were built: Model A included age, sex, diagnosis era, histology, and stage (n = 17 287); Model B added smoking status with excluding missing cases (n = 5 653).

Results: Cohort mean age was 63.7 ± 9.7 years; 85.4% male; 54% diagnosed in 2015–2019. Kaplan–Meier survival was 48.2% [95% confidence intervals (CI): 47.5–48.9] at 1 year, 19.1% [95% CI: 18.5–19.9] at 3 years, 12.6% [95% CI: 12.0–13.3] at 5 years, and 7.1% [95% CI: 6.1–8.2] at 10 years. In Model A, higher mortality was independently associated with older age [Hazard Ratio (HR) 1.02 per year; $p < 0.001$], small-cell histology [HR 1.19; $p < 0.001$), and advanced stage [HR 2.33; $p < 0.001$], whereas female sex [HR 0.73; $p < 0.001$] and diagnosis in 2015–2019

[HR 0.88; $p < 0.001$] conferred lower risk. Model B showed never smokers [HR 0.84; $p = 0.033$] and former smokers [HR 0.85; $p < 0.001$] had significantly reduced mortality compared to current smokers.

Conclusion: Smoking status at diagnosis provides independent prognostic information in lung cancer beyond demographic and tumor-related factors. Incorporating detailed smoking history into prognostic models may improve risk stratification and guide clinical management.

Keywords: lung cancer, cigarette smoking, survival

The REDECAN Training Courses: Building Capacity For Cancer Registration In Spain And Beyond

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Background/ Purpose: The Spanish Network of Cancer Registries (REDECAN) is the cooperative body that brings together population-based cancer registries (PBCRs) across Spain, including the Spanish Registry of Childhood Tumours (RETI). REDECAN currently includes PBCRs from Asturias, the Canary Islands, Castellón, Castilla y León, the Basque Country, Girona, Granada, La Rioja, Mallorca, Murcia, Navarra, Tarragona, the Childhood Tumour Registry of the Valencian Community, the Madrid Childhood and Adolescent Cancer Registry, and RETI. REDECAN aims to strengthen the role of Spanish PBCRs and RETI as core components of the national cancer information system, enhancing their contribution to cancer surveillance, control, and collaborative research. One of REDECAN's key specific goals is to facilitate continuous training for cancer registry personnel.

Methods / Approaches: Since its foundation in 2011, REDECAN has organized annual training courses for registry staff, coordinated by its training working group. Each course is aligned with the international standards of cancer registration that are recommended by the International Association of Cancer Registries, (the IACR) and European Netowork of cancer registries (ENCR). Some members of this group are affiliated with the Global Initiative for Cancer Registry Development (GICR). In collaboration with the IACR Latin America and Caribbean Hub, REDECAN has delivered training sessions in various locations, including Latin America and the Caribbean.

Results: The training program targets individuals at all career stages—from newly hired staff to experienced professionals seeking to update their skills—including registrars, analysts, data managers, and registry directors. The curriculum has evolved to cover core competencies in data

collection, coding, quality control, and data analysis, contributing to capacity building in Spain and other Ibero-American regions.

Conclusion: REDECAN’s training courses provide a sustainable and collaborative model for capacity building in cancer registration. By fostering technical skills and strengthening networks between professionals and registries, REDECAN contributes to improving cancer surveillance and research across Spanish-speaking countries and beyond.

Keywords: codification courses training, population-based cancer registries, classifications, international recommendations

Hepatocellular Carcinoma: Do Etiologies Matter For Prognosis? The Case Of Madeira, Portugal

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Background/ Purpose: Liver cancer is the sixth most common and third deadliest cancer globally. In Portugal, it remains highly lethal, with an estimated 1740 new cases and 1611 deaths in 2022 (Globocan). This study aimed to assess the etiologies and prognostic factors of hepatocellular carcinoma (HCC)¬—which accounts for over 80% of primary liver cancers—on the islands of Madeira, Portugal.

Methods / Approaches: All HCC cases diagnosed between 2010 and 2023 in the Madeira Cancer Registry were reviewed. Etiology and potential prognostic factors were determined through medical chart abstraction, including serological markers, and discharge data. Survival outcomes were analyzed using Kaplan-Meier estimates, and Cox proportional hazards models (SPSS 22).

Results: A total of 240 HCC cases were identified (81.7% males; median age: 66yrs). The most common etiology was alcohol-related liver disease (ALD, 50.0%) followed by metabolic dysfunction–associated steatotic liver disease (MASLD, 17.1%), hepatitis B (16.5%), and hepatitis C (11.9%), with important sex-based differences. Nearly two-thirds (63.8%) of cases were diagnosed at advanced stages (III or IV). The age-adjusted 5-year overall survival was 5.6% (95% CI: 2.0-9.2%), and median survival was 6 months (0.5±0.1yrs). In multivariable analysis, cancer stage was the strongest predictor of survival (HR for stage IV vs. I: 2.93; 95% CI: 1.85–4.62). While HCC etiology was not independently associated with prognosis, alcohol use was significantly linked to increased mortality (HR: 1.81; 95% CI: 1.26–2.60; p=.001).

Conclusion: Attributable etiologies showed no influence in our group. Alcohol constitutes an important risk factor alongside viral hepatitis and various metabolic conditions. Identifying these risks is necessary to understanding prognosis. Disease stage significantly affects HCC outcomes, and early diagnosis in followed cirrhotic patients is needed for better results on Madeira.

Keywords: risk factors, etiology, hepatocellular carcinoma, survival, prognosis

Comparison Of ICD-10 And ICD-11 Compliant Cancer Incidence Using The Japan National Cancer Registry

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Background/ Purpose: The 11th revision of the International Classification of Diseases (ICD-11) was enforced in January 2022. This study aimed to determine to what extent the number of cancer cases based on ICD-11 classification has changed compared to the number of cases based on the previous ICD-10 classification.

Methods / Approaches: The Japan National Cancer Registry data in 2020 was used. ICD-10 information converted from ICD-Oncology 3rd version at the National Cancer Center was converted to ICD-11 using the mapping table published by WHO in January 2025. Differences in the number of cases in ICD-11 and in ICD-10 classifications were compared. When a case corresponded to more than one ICD-11 classification, the case was deemed as classified into all corresponding categories. This study was approved by the Institutional Review Board of St. Luke's International University. Data from the National Cancer Registry were independently compiled based on the information provided by the National Cancer Center in Japan in accordance with the Cancer Registration Promotion Act.

Results: Compared to conventional brain and nervous system (C70-C72 in ICD-10), the number of "neoplasms of brain or central nervous system (2A0)" cases increased approximately 3-fold. The number of overall hematopoietic tumors (2A2-2B3 in ICD-11) cases was increased by 19.3%, compared to "malignant lymphoma C81-85, C96", "leukemia C91-95," and "multiple myeloma C88, C90". Brain or nervous system and hematopoietic tumors being classified in a single ICD-10 code that were classified into multiple ICD-11 categories. The respective changes was 0.0 to 0.7% for brain or central nervous system, -2.7 to 11.9% for lymphoid neoplasms, 1.9 to 14.0% for myeloid neoplasms, and -62.4 to 3.6% for other hematopoietic neoplasms.

Conclusion: Our results suggests that certain cases classified based on the ICD-11 system can be significantly different from the previous system. It is important to notify the stakeholders to avoid misinterpretations.

Keywords: ICD-11, ICD-10, Cancer incidence, Japan

Professional Collaboration And Its Impacts On Registry Data: The Ibadan Cancer Registry (Ibcr) Experience.

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Background/ Purpose: Accurate, timely and complete information are essential ingredients in data collection, presentation and reporting.The Ibadan Cancer registry collects standardized information about patients' demographics, diagnoses, treatments, staging and mortality, which help in determining healthcare priorities, cancer control planning and outcome studies. The study 'Network for Oncology Research in Sub-Sahara Africa (NORA)' in which the IBCR participated, required more Information than what we would normally keep in the registry databases. Thus, there was a need to collaborate with other healthcare providers outside the registry. We report our experience in this case.

Methods / Approaches: In 5 months, we examined 657 casefiles of patients with 14 different cancer types diagnosed during 2017-2021. We retrieved records from the hospital health information department of our teaching hospital and some outside hospitals within the coverage area of our population-based cancer registry. Cancer Registrars and Data management experts traced case files, extracted information on stage, diagnosis, treatment, and outcome of all cases and inputted these on the Redcap app. Registry staff did eTNM staging of cases when staging information was absent and made phone calls to patients and patients' relatives to ascertain status of patients. The help of other professionals such as Pathologists, Heamatologists and Health information Personnel were employed in ensuring quality extractions and staging of cancer. Clinicians helped review and proper staging of cases and to interpreted treatment information where not properly documented, health information management staff assisted in case notes finding, retrieval and re-filing.

Results: Only 180 cases (27.4%) had almost complete information initially where external help was not required, 477 cases (72.6%) required the collaboration of other professionals aside registry trained staff. These 477 cases were successfully completely abstracted with these collaborative efforts.

Conclusion: Effective collaboration with relevant professionals was a key strategy to achieve success and prompt delivery in this recent study.

Keywords: Cancer registration; relevant Collaboration; output; impact

Subsite-Specific Analysis Of Colorectal Cancer By Stage At Diagnosis, Treatment Patterns, And Survival In China

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Background/ Purpose: Colorectal cancer originating from different anatomical subsites exhibits heterogeneous clinical manifestations and prognostic outcomes. Identifying these differences can significantly enhance the precision of prevention and treatment strategies. We analyzed stage distribution, treatment patterns, and survival by tumor anatomical subsites using data from a multicenter, hospital-based cancer survival cohort in China.

Methods / Approaches: We enrolled 6,423 patients newly diagnosed with colorectal cancer between 2016 and 2017 from 23 hospitals across 12 provinces, covering six major geographic regions with diverse socioeconomic backgrounds. Among them, 1,291 had proximal colon cancer, 1,478 had distal colon cancer, and 3,654 had rectal cancer. We tracked patients' vital status through both passive and active follow-up, with the final follow-up conducted on December 31, 2023. We used chi-square tests to compare stage distribution and treatment patterns across anatomical subsites and applied multivariable Cox regression to identify prognostic factors.

Results: Proximal colon cancer had the lowest proportion of stage I disease (8.4%), while rectal cancer had the highest (19.9%) ($P < 0.001$). Surgery rates were higher in colon cancer than in rectal cancer for both stage II (97.3% vs. 93.4%) and stage III (95.7% vs. 90.4%) ($P < 0.001$). Survival declined with advancing stage across all subsites. Proximal colon cancer had the lowest survival at stage III (59.8%) and stage IV (11.8%). In contrast, rectal cancer had the highest survival at stage III (64.9%), and distal colon cancer showed the best survival at stage IV (19.3%). Advanced stage, proximal colon subsite, and older age independently predicted worse prognosis. Surgery significantly improved survival across all anatomical subsites, and chemotherapy provided particular benefit in proximal colon cancer.

Conclusion: Colorectal cancer demonstrates subsite-specific variations in stage at diagnosis, treatment, and prognosis. Proximal colon cancer shows lower early detection, more frequent late-stage diagnosis, and poorer outcomes, emphasizing the need for improved screening and optimized treatment strategies.

Keywords: Colorectal cancer, Anatomical subsite, Stage, Treatment pattern, Survival

Cardo: An R Package For Visualising And Publishing Population-Level Cancer Statistics

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Background/ Purpose: Routine cancer data collection is vital for tracking cancer incidence and mortality trends and identifying disparities across populations and geographic areas. However, the impact of these data depends on effective communication with policymakers, healthcare professionals, and the public. A major barrier to this is the limited availability of user-friendly and affordable tools for presenting cancer statistics in an accessible and engaging format.

Methods / Approaches: To address this gap, we developed CaRDO (Cancer Registry Dashboard Online), a free and user-friendly R package for publishing cancer registry data through interactive online dashboards. CaRDO is designed to be both intuitive and secure, enabling users with minimal R programming experience to create web-based tools for visualising and sharing the latest cancer statistics. It was developed and tested iteratively with feedback from internal and external data custodians and cancer registrars to ensure usability, clarity, and data governance compliance.

Results: CaRDO enables rapid creation of visual, interactive dashboards that display population-level cancer statistics. Its simple interface and design make it accessible to data custodians with limited technical skills, while built-in privacy safeguards ensure that sensitive data used to generate the statistics remain offline and protected. By lowering technical and financial barriers, CaRDO empowers under-resourced cancer registries to improve the accessibility, visibility, and impact of statistics based on the data that they collect.

Conclusion: CaRDO offers a practical solution for enhancing the dissemination of routine cancer statistics. By lowering technical and financial barriers to reporting, CaRDO provides cancer registries with an opportunity to better communicate key cancer statistics and extend the reach and impact of the data they collect.

Keywords: Routine reporting, R software, Online dashboard, Cancer registry

Enhancing Cancer Registry Data Quality in less-developed Cities: A Short-Term Training-Focused Approach

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Background/ Purpose: The policy stipulates that by 2030, the overall five-year cancer survival rate in Hunan Province must reach no less than 46.6%. Accurate calculation of this indicator fundamentally depends on establishing a robust foundation - high-quality cancer registry data that meets standardized criteria.

Methods / Approaches: This study selected Huaihua City, an economically underdeveloped region in Hunan Province, as the observation unit. Among the 14 prefecture-level administrative divisions in Hunan Province, Huaihua demonstrates significantly lagging economic indicators: its gross domestic product (GDP) ranks 12th in aggregate terms and 13th in per capita terms, showing a notable gap compared to the provincial average. The training program was implemented under the national public health capacity-building initiative, adopting a blended learning approach: Two intensive training sessions annually, each featuring 6-week on-site practical training,Supplemented by ongoing remote technical guidance. The curriculum framework comprises the following core modules: End-to-end data management (collection, organization, quality control, and reporting standards)/ Practical applications of ICD-O-3 & ICD-10 disease classification coding/ Data logic verification techniques/ Duplicate case identification methodologies/ Death case tracing and supplemental reporting mechanisms, along with other critical technical components.

Results: Huaihua City administers 12 county-level divisions. Baseline data from 2022 indicated that only 2 districts/counties (16.7%) met national quality control standards for cancer registry data. Following systematic training interventions, the 2024 evaluation demonstrated remarkable improvement, with 10 districts/counties (83.3%) now achieving compliance - representing a fivefold increase in data quality compliance rates.

Conclusion: Targeted training interventions constitute a validated approach for promptly enhancing cancer surveillance data quality in resource-limited settings. Evidence shows that well-designed training modules incorporating both theoretical instruction and practical exercises yield substantial improvements in case ascertainment rates and ICD coding precision.

Keywords: Economic underdevelopment, Prefecture-level city, Cancer registry, Quality control, Short-term training.

Federated LLM Automates Pathology Data Extraction at Tertiary Hospital to Support National Registry Efforts in Singapore

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Background/ Purpose: Reliable, structured pathology data is foundational to cancer registries, yet manual abstraction from free-text reports remains a barrier to scale, speed, and consistency. We present the deployment of a federated oncology-optimised large language model (LLM) at Tan Tock Seng Hospital (TTSH), second largest tertiary hospital in Singapore, to automate the extraction of structured data directly at source and potentially accelerate institutional contributions to Singapore's cancer registry data collection.

Methods / Approaches: The open-source LLM (LlaMA 3.1 70B), customised via oncology-specific prompt engineering on local reports, was deployed in a secure isolated cloud environment for TTSH, with all protected health information deidentified and masked at source. The model was configured to extract 9 structured data fields: Specimen Origin, Specimen Type, Cancer Diagnosis, Site of Involvement, Histology, Tumour Size, T and N categories, and Site of Metastasis. QA and governance protocols were aligned with those used in a prior deployment at another national cancer centre to support cross-site reproducibility and multicentric, data harmonization.

Results: Among 137 patients, fields with > 100 reference labels showed strong F1 scores: Specimen Type (0.971), Site of Involvement (0.981), Cancer Diagnosis (0.929), and Histology (0.921). T and N categories reached F1 scores of 0.947 and 0.882, respectively. Tumour Size and Metastasis Site achieved 100% precision and recall. Manual validation accepted 647/678= 95.4% of all outputs as accurate. This reflects not only the precision of extraction but also clinical acceptability for downstream use. The QA framework flagged ambiguous cases and mixed histology cases for review, facilitating continuous prompt refinement.

Conclusion: This deployment confirms the precision, generalisability, and scalability of a federated LLM pipeline. It enables source-level automation at TTSH to streamline national-level lung cancer data collection efforts. This work demonstrates a viable blueprint for nationwide, privacy-preserving cancer registry automation using AI.

Keywords: Data Federation, Oncology Large Language Models, Pathology Report Extraction Automation, Cancer Registry Automation, Real World AI Implementation

Impact of Demographic Transition on Thyroid Cancer: İzmir Cancer Registry Data, 1998–2017

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Background/ Purpose: This study applies Das Gupta's decomposition to partition the change in thyroid cancer incidence in Izmir (1998–2017) into contributions from population growth, ageing, and other factors, using annual per capita physician visits to estimate the overdiagnosis component.

Methods / Approaches: Age-specific incidence and population data were drawn from the IARC CI5 database. Using the "mean of ordering" approach, we first quantified the effects of growth and ageing on inter-period case changes between 1998–2002 to 2013–2017. Then, we estimated overdiagnosis by scaling the national increase in per-capita visits to the absolute change between the first and last periods.

Results: In Izmir, the number of thyroid cancer cases among males increased from 90 in 1998-2002 to 1064 in 2013-2017, and among females from 329 to 3948 over the same period. In males, population growth exceeded ageing in the first two comparisons but ageing prevailed in the final one; in females, ageing outpaced growth in every comparison.In the last two inter-period comparisons, the percentages attributable to population aging were higher in males, whereas those attributable to population growth were higher in females. In males, of the 973-case increase, 2.2% was due to population growth, 2.8% to ageing, 26.7% to overdiagnosis, and 68.3% to other factors; in females, of the 3,619-case increase, 2.3% was due to population growth, 2.2% to ageing, 25.3% to overdiagnosis, and 70.3% to other factors between 1998-2002 and 2013-2017 periods.

Conclusion: Non-demographic factors remain the main driver of rising thyroid cancer incidence, but their relative impact declined as growth and ageing contributions steadily rose. In men, growth initially outpaced ageing before ageing led in the final interval; in women, growth always exceeded ageing. The overdiagnosis proxy likely underestimates local diagnostic practices—region-specific ultrasound, biopsy, or endocrinologist visit data should be used in future analyses for greater precision.

Keywords: Das Gupta Decomposition, Izmir Cancer Registry, Overdiagnosis, Thyroid Cancer

Cervical Cancer in Kyrgyzstan: Population-Based Trends in Stage and Mortality, 2016–2023

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Background/ Purpose: Kyrgyzstan committed to WHO's global strategy to eliminate cervical cancer by 2030. In 2023, the vaccination of girls against the human papillomavirus has been successfully started. Fragmentary studies on early detection of cervical cancer with the assistance of international partners were conducted by the Ministry of Health in various regions of the Kyrgyz Republic.

Methods / Approaches: This study uses PBCR data to assess progress in early detection by analyzing stage distribution and mortality trends. The study was carried out within the framework of a research topic supported by the Ministry of Science of the Kyrgyz Republic. Cancer cases were staged using the TNM-7 classification. We calculated stage-specific detection rates and sex-stratified mortality. Data analysis was performed using R and Microsoft Excel. Mortality data was enhanced with information from the Ministry of Digitalization of the Kyrgyz Republic.

Results: The share of stage I cases modestly increased in Talas (from 10.7% to 14.8%), while Chui and Batken showed persistent late-stage diagnosis (> 57 % at stage III–IV). Time from registration to treatment exceeded 6 months in 51.5% of cases. One-year mortality remained at 25–31%, highest in rural areas. A significant decline in new case diagnoses occurred during COVID-19. However, Talas Oblast stands out as the only region where the detection rate for Stage I and II cases reaching pre-pandemic levels. Increasing public awareness and access to primary health care is of great importance in mobilizing the population for early diagnosis of cancer.

Conclusion: Despite pilot screening efforts, registry data show minimal progress toward early-stage detection. An integrated approach is of great importance in the success of secondary prevention of cervical cancer - the availability of services and raising public awareness, as well as interaction between all levels of health care. Strengthening PBCR-based monitoring is essential for evaluating policy impact and meeting WHO goalы.

Keywords: Cervical Cancer, Early detection, stage, mortality

Causes Of Death In Survival Analysis Of Cancer Patients

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Background/ Purpose: Cancer survivors are a vulnerable population group for several reasons (treatments, shared risks factors, genetic), therefore they are a population with a higher risk of dying from other diseases compared to the general population. Our aim is to analyse causes of death (CoD) in cancer patients information and compare cancer-specific with relative survival for ten adult cancers.

Methods / Approaches: We analysed 1,813,356 first primary tumours diagnosed in patients aged 15-79, from 1998 to 2013 and followed-up to 31/12/2014, from 17 selected registries with > 89% completeness of CoD from EUROCARE-6. We compared the observed deaths not attributed to the diagnosed cancers with the expected deaths calculated from the population life table by sex, age and calendar year.

Results: RR of non-cancer death greater than 2 compared to the general population were found for H&N (2.1) and for female lung (2.6) cancers. Values between 1 and 2 were observed for stomach (1.3 in males and 1.5 in females), male lung (1.9), cervix (1.6), ovary (1.6), kidney (1.1 and 1.3) and bladder (1.3 and 1.4). RR lower than 1 were estimated for prostate (0.8), and female breast (0.9) cancers. Most tumours showed a systematic decrease by age of RR of death from other causes. Head and neck cancer patients had the highest differencesbetween cancer specific and relative survival, with the former being at 10-years 7-11 percent points above the latter. Lower differences (2-6% points), were observed for bladder, stomach, lung, cervix, ovary, and kidney cancers.

Conclusion: Separating deaths due to cancer progression from those due to other causes, including other independent cancers, has an impact on patients follow-up and quality of life. Cancer registries usually collect CoD data from official sources and only sporadically check their quality using other available information. Validation and improvement of CoD information should enter into the main objectives of cancer registries.

Keywords: cause of death, cancer patients

Access Barriers To Cancer Data: Lessons Learnt From Nairobi Population Based Cancer Regıstry

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Background/ Purpose: Established in 2001, the Nairobi Cancer Registry is tasked with cancer surveillance through collection, collation, and analysis of cancer data to support control strategies in Kenya. The registry's data has played a vital role in shaping cancer control efforts, monitoring interventions and outcomes, and informing policy and research. Despite notable advancements in Population-Based Cancer Registration (PBCR), challenges in accessing key data sources persist. This report highlights these access barriers and shares lessons learned in overcoming them, aiming to strengthen cancer registration through knowledge exchange.

Methods / Approaches: The cancer registry team, consisting of cancer registrars, research scientists, and data managers, convened consultative meetings to identify barriers to data access from various sources and to develop strategies for overcoming these challenges.

Results: Main barriers identified included limited access to critical data sources; a shortage of trained cancer registrars; the recent implementation of the Data Protection Act of 2019; absence of digitized patient record systems in most public health facilities and incomplete clinical data in patient records, all of which negatively impacted data quality. To address these challenges, we implemented several measures: registering our institution as an authorized data handler and processor; maintaining continuous engagement with stakeholders to strengthen collaboration with hospitals, hospices, civil registration offices, and other data providers; advocating for policies that support data sharing; and promoting the digitization of patient records in public health facilities. Lessons learned include the critical importance of ongoing stakeholder engagement to raise awareness about PBCR. We discovered that effective solutions often emerge through broad-based consultations, especially when navigating new legislation that directly affects surveillance activities.

Conclusion: Population-based cancer registration is crucial for understanding cancer trends, guiding interventions and shaping policies. Limited access to data sources hinders data quality. Ongoing stakeholder engagement and raising awareness among health workers and policymakers are essential to overcoming these challenges and enhancing data access.

Keywords: Population Based Cancer Registration, access, barriers, lessons learnt

Enhancing Cancer Registries in the Gulf Cooperation Countries (GCC): Gulf CDC and IARC Partnership

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Background/ Purpose: The Gulf CDC was founded in 2021 with a strategic objective to advance public health across the GCC. With support from the Gulf Health Council (GHC) and partnership with IARC, the establishment and enhancement of the Gulf Cancer Registry was added to the mandate.

Methods / Approaches: A multi-tiered approach was adopted to lay the groundwork for the regional Gulf Cancer Registry. Key components include: 1- Official agreement between Gulf CDC and IARC was signed to seek expert and implementation support. 2- A comprehensive baseline assessment of every national cancer registry in the GCC through a standardized Registry Review Questionnaire. 3- Field visit assessments carried out in Saudi Arabia, Bahrain, and Qatar. 4- Execution of targeted basic and advanced training programs for PBCR personnel. 5- Plan and implement two fellowships under the IARC Fellowship Program. 6- Development of a central data workflow to harmonize and standardize the Gulf Cancer Registry.

Results: Within 18 months, the initiative delivered impactful results across the Gulf region. A dedicated working group was formed to ensure sustained collaboration among GCC countries, supported by regular monthly meetings. A standardized assessment tool was deployed to evaluate cancer registries' operations, guiding field visits in Saudi Arabia, Bahrain, and Qatar. These assessments offered critical insights into national registry functionality and gaps, in addition to recommendations to enhance national registries. Capacity-building was advanced through two regional training (basic and advanced data quality) in addition to two IARC fellowships (data and research activity), enhancing technical expertise in cancer registration and data quality. Most notably, a centralized, tailored workflow was established at the Gulf CDC to harmonize and standardize cancer data across the region.

Conclusion: The Gulf regional cancer registry initiative marks a significant step toward unified high-quality regional cancer surveillance. While several milestones have been completed, the initiative remains active, with additional activities to be delivered.

Keywords: GulfCDC, IARC, cancer, GCC, registry

European Liver Cancer Burden By Subtype: Results From The European Cancer Informatıon System (ECIS)

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Background/ Purpose: Liver cancer is the sixth most common cause of cancer death in Europe, showing high geographical variability and increasing trends. We performed a preliminary analysis to estimate liver cancer burden in Europe by histological subtype.

Methods / Approaches: We analysed data provided to the European Cancer Information System (ECIS) by 84 population-based cancer registries affiliated to the European Network of Cancer Registries (ENCR) from 20 European countries. We focused on the following liver carcinoma subtypes: intrahepatic cholangiocarcinoma (ICC), hepatocellular carcinoma (HCC). We calculated age-standardised cancer incidence rates (ASIRs), adjusting for the European standard population 2013, by sex and carcinoma subtype on the period 2017-2019. We also estimated country-specific time trends of cancer incidence by pooling together regional cancer registries where needed and compared the results with the international figures.

Results: Liver cancer ASIRs were higher in men (median value 19 per 100,000) than in women (6 per 100,000) with a male-to-female sex ratio varying from 2 to 6 across registries. ASIRs showed great variability across European registries: almost fourfold (from 8.7 to 37.5) in men and fivefold (from 3.3 to 18.4) in women. HCC showed higher incidence than ICC mainly in men (10.3 and 3.4 in men and 2.6 and 2.4 in women), being HCC rates up to 8 times higher than ICC rates across registries in men, and up to 5 times in women. Liver cancer subtypes showed different trend patterns, being ICC rates generally stable or increasing over time, while HCC rates generally stable or decreasing, with some exceptions.

Conclusion: Liver cancer burden presents high geographical, sex and histological subtype variations attributable to the effect of several factors including alcohol consumption, obesity, liver diseases and social determinants, plus hepatitis B and C infections and hepatitis B vaccination mainly on HCC trends. These disparities need more efforts for tailored prevention and healthcare policies.

Keywords: Liver cancer, Cancer Registries, Histological subtypes

Leveraging Digital Infrastructure to Improve Cancer Registry Data Quality: Insights From the UAE National Cancer Registry

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Background/ Purpose: Accurate cancer data is critical for effective cancer control and policy planning. In the United Arab Emirates (UAE), the Ministry of Health and Prevention (MOHAP) enhanced cancer surveillance by integrating the National Cancer Registry into the Enterprise Data Warehouse (EDW)—a national platform supporting disease registries. This integration enables automated data collection, improved data quality assurance aligned with IARC standards, and timely reporting to support public health action.

Methods / Approaches: The EDW aggregates data from health information systems, hospitals, labs, clinic, the national mortality system using unique identifiers such as Emirates ID. Cancer registry data is updated automatically through secure transfers that follow national and international standards. The registry is routinely linked with mortality records, and overseas treatment data to fill data gaps and enhance case details.Innovative Enhancements:The UAE is advancing toward full automation of non-communicable diseases registries. A key step is integration with Riayati, the national Unified Medical Record platform, enabling centralized, real-time data sharing. The EDW also incorporates artificial intelligence (AI) and advanced analytics solutions, to uncover deeper insights into cancer trends, and improves the accuracy of public health forecasting and decision-making.

Results: Integration with the EDW has significantly improved the completeness, quality, and timeliness of cancer data. Automated updates capture vital information such as mortality status and cause of death, reducing manual work for provider. Real-time dashboards now support faster decision-making in research and policy.

Conclusion: The UAE's model demonstrates how digital health infrastructure can transform cancer surveillance. This approach has improved cancer registration processes, enhanced the quality and utility of data, and facilitated evidence-based public health action. It offers a scalable framework for countries aiming to modernize disease registries and improve public health outcomes.

Keywords: cancer, cancer registry, innovation

The Impact Of The Covıd-19 Pandemic On Cancer Diagnosıs Across Countries: An Icbp Populatıon-Based Study

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Background/ Purpose: This study assesses the incidence and stage of major cancer types before and during the COVID-19 pandemic across seven countries in the International Cancer Benchmarking Partnership (ICBP).

Methods / Approaches: Data on more than 2 million patients diagnosed with colon, rectum, lung, prostate, breast, melanoma of skin or ovary cancer were collected from population-based cancer registries in Australia, Canada, Denmark, Ireland, New Zealand, Norway, and the United Kingdom. Monthly cases and age-standardised incidence rates (ASR) for 2020 were predicted based on data and trends between 2015-2019 and compared with observed rates. Stage distribution and rates in 2020 were compared with previous years.

Results: Between April and December 2020, an estimated 54,382 out of 338,712 expected cases (16%) were missing, with largest deficits in cases of breast, melanoma and prostate and least deficits in ovary and lung cancer. Largest reductions in incidence rates were observed for breast cancer, decreasing from 189.8 to 139.3 per 100,000 in Ireland and smallest, 171.3 to 165.9, in New Zealand. Largest decreases in cancer incidence rate were observed between April to July 2020, where a 54% and 36% deficit in prostate cancer cases were found in UK and Ireland, respectively. A return to expected cancer diagnosis was fastest in Denmark and New Zealand, as early as 2 months after the start of the pandemic. Some stage disruptions were also observed with lower rates of early-stage breast cancers compared to previous years.

Conclusion: The pandemic had the largest impact during the first few months when restrictions in access to healthcare were greatest. Reductions in breast cancer incidence and early-stage diagnoses were partly linked to suspensions in screening services and decreases in melanoma and prostate cancer incidence reflected disruptions in utilisation of general health care. Further investigations of the long-term impact on cancer patients are warranted. (On behalf of ICBP and Local Leads)

Keywords: COVID-19, cancer, incidence, cancer staging, cancer registry

Persistent Inequities In Locp Cancer: Evidence From 27 Years Of Data In Sergipe, Brazil

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Background/ Purpose: Lip, oral cavity, and pharyngeal (LOCP) cancers remain a significant public health challenge in low- and middle-income countries (LMICs), where late diagnoses and limited access to healthcare services prevail. This study analyzed temporal trends and spatial distribution of LOCP cancer incidence and mortality in Sergipe, Brazil, a state marked by socioeconomic and healthcare disparities, with the goal of identifying regional gaps and opportunities for improved cancer control.

Methods / Approaches: A population-based, retrospective study was conducted using data from the Aracaju Cancer Registry (1996–2017) and the Mortality Information System (1996–2022). Age-standardized (World population) and age-specific incidence and mortality rates were estimated. Temporal trends were assessed via Joinpoint Regression to calculate the Annual Percent Change (APC) and Average APC (AAPC). Spatial patterns were examined using Empirical Bayesian Kriging to identify high-risk areas. The Mortality-to-Incidence Ratio (MIR) was calculated to ensure effectiveness of cancer control.

Results: A total of 2,945 new LOCP cancer cases and 1,614 deaths were reported. In men, the age-standardized incidence rate (ASR) declined from 12.8 per 100,000 (1996–2005) to 11.3 (2013–2017), while mortality increased from 3.8 to 6.1 per 100,000 (1996–2005 vs. 2013–2022). Among women, incidence declined significantly (AAPC: -2.3%; 95% CI: -4.1 to -0.4), whereas mortality trends remained relatively stable in men. Spatial analysis revealed elevated incidence rates in urbanized coastal zones and higher mortality in underserved inland areas. An upward trend in MIR over time highlighted persistent inequalities in early detection and treatment access.

Conclusion: The study revealed enduring regional and sex-based disparities in LOCP cancer burden across Sergipe. The increasing MIR and shifting spatial patterns reflect inequities in prevention, diagnosis, and treatment. Strengthening early detection initiatives, scaling HPV vaccination, and reducing alcohol and tobacco consumption are critical to improving outcomes. Moreover, investing in robust cancer registration and surveillance systems is essential for shaping targeted, evidence-based public health interventions in LMICs.

Keywords: Lip cancer, Oral cavity cancer, pharyngeal cancer, cancer registries, Spatial analysis

Building On The Platform Of The Australian Cancer Atlas - Results And Opportunities For Expansion

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Background/ Purpose: The Australian Cancer Atlas, launched in 2018 and significantly expanded in 2024 (Atlas 2.0), provides detailed, small-area visualisations of cancer incidence, survival, screening participation, and other outcomes across Australia. Developed in response to persistent geographic disparities in cancer outcomes, the Atlas aims to support equity-focused research, policy, and practice. Despite overall improvements in cancer outcomes, many Australians—particularly those in rural, remote, and disadvantaged areas—continue to face worse outcomes.

Methods / Approaches: Bayesian spatial and spatio-temporal models were applied to population-based cancer registry, hospital admission, screening, and Medicare-funded procedure data to calculate small area statistics and their uncertainty across over 2,200 geographical areas. Development of visual explainers using focus groups and content experts helped communicate key messages. Enhancements to the user interface of the digital platform were made to support the expanded content. In parallel, subsequent analyses estimated avoidable cancer-related deaths by comparing observed survival to benchmarks.

Results: Since its launch, the Atlas has been accessed by more than 65,000 users from over 100 countries, influencing policy, advocacy, and research agendas. It recently won the 2024/25 Oceania Highest Achievement and Technical Excellence awards by the Geospatial Council of Australia. From 2010 to 2019, 33,982 cancer deaths (11.7%) were deemed avoidable if all areas had matched the survival outcomes of high-survival areas.

Conclusion: Spatial disparities in cancer survival results in thousands of premature cancer deaths, highlighting the need to uncover reasons why they exist. Looking forward, several initiatives are proposed to help inform these investigations. These include developing advanced statistical methods for timely geospatial projections, broadening the measures using linked population-based data, integrating artificial intelligence to personalise and simplify user engagement, and expanding narrative-based tools to improve accessibility. A digital Atlas template could support adoption in other countries, fostering international comparisons and collaborations aimed at informing efforts to reduce cancer disparities worldwide.

Keywords: Cancer Atlas, Geospatial Modelling, Cancer Disparities, Survival Analysis, Digital Epidemiology

Are We Meetıng The Who GICC Target? An Internatıonal Cancer Survival Index From Concord-4

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Background/ Purpose: CONCORD is an ambitious global public health programme for the long-term surveillance of population-based cancer survival. In CONCORD-4, we invited submission of anonymised individual records for all cancers in children diagnosed during 1990-2022.We aimed to assess progress towards the target in WHO's Global Initiative for Childhood Cancer (GICC), for five-year survival for all children with cancer combined to reach 60% by 2030.

Methods / Approaches: The 700,000 childhood cancer records submitted to CONCORD-4 were categorised by age (< 1, 1-4, 5-9, 10-14 years), sex, the 12 major ICCC-3 groups, and World Bank income group. We scaled up the numbers submitted from UMIC and LMIC for 2010-2019, to reflect differences in the underlying childhood populations in CONCORD-4, and for differences between World Bank groups in the global population of children in 2015. Trends in five-year net survival were estimated by age, sex and ICCC-3 group , using the Pohar Perme approach. A Cancer Survival Index (CSI) was produced for each country and calendar period as a weighted average of these estimates.

Results: The combined distribution is a set of 96 weights that reflects global differences in the frequency of childhood cancer by age, sex, type of cancer and World Bank income group. It enables robust international comparison of a CSI for all childhood cancers combined. Similar weights are available for the six cancers prioritised by WHO for the GICC.The five-year CSI has increased in most countries since the 1990s. During 2015-2019, the CSI was over 80% in most HIC, over 60% in most UMIC and over 50% in LMIC.

Conclusion: The new childhood CSI is a useful tool to assess progress towards the WHO GICC target.Preliminary results from CONCORD-4 suggest that most countries with a cancer registry have met or are on track to meet the GICC target.

Keywords: WHO's Global Initiative for Childhood Cancer (GICC), CONCORD-4, Cancer Survival Index, net survival trends

Quality Assurance Of Cancer Screening By Identifying Cancer Patients Using Cancer Registry Data

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Background/ Purpose: In Japan, municipalities provide five cancer screening programmes (stomach, colorectal, lung, breast, and cervical), but quality assurance remains insufficient, as tracking whether screenees develop cancer after undergoing screening is difficult. This study aimed to assess the cancer incidence following screening by using cancer registry data, with the objective of improving quality assurance in cancer screening programmes.

Methods / Approaches: This study examined 116,420 cancer screening records for stomach (27,991), colorectal (38,873), lung (35,499), and cervical (14,057) cancer in Aomori Prefecture, Japan, with some individuals undergoing multiple screenings. Screening data were linked with cancer registry data from the National Cancer Registry Database using identifiers such as name (in Chinese and Japanese characters), date of birth, and address at diagnosis. Cancer incidence was assessed over a one-year follow-up from the screening date. Based on screening outcomes and subsequent diagnoses, screenees were classified as true positive, false positive, true negative, or false negative.

Results: The linkage algorithm used in the operation of the cancer registry enabled accurate integration of cancer registry data with cancer screening data. The sensitivity of the cancer screening conducted was as follows: 76.7% for stomach cancer, 89.1% for colon cancer, 55.4% for lung cancer, 88.7% for breast cancer, and 92.0% for cervical cancer. The specificity for each of these screenings exceeded 90%.

Conclusion: Adopting the linkage algorithm used in the operation of the cancer registry as a standard methodology allows for comparable estimates of sensitivity and specificity. These approaches are gaining wider adoption, leading to enhanced quality assurance and effectiveness of cancer screening in Japan.

Keywords: cancer screening, sensitivity and specificity, linkage

Epidemiological Characteristic Of Very Rare Lymphoid Malignant Hemopathies In A French Department.

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Background/ Purpose: Fourty years of registration of hematological malignancies allow us to report data on Burkitt lymphoma (BL), Hairy cell Leukemia (HCL) and Mantle cell Lymphoma (MCL) that are rarest lymphoid diseases.

Methods / Approaches: Cases diagnosed in the population of the department of Côte d’Or, Burgundy, France, were registered between 01/01/1980 and 31/12/2019. They were coded according to ICD-O-3 classification. We described each entity by age at diagnosis, sex-ratio, European population standardized incidence, overall and net survival. We used Poisson regression to assess the mean variation of the incidence rate, Kaplan Meier method and Cox model to estimate Overall Survival (OS) and the Pohar Perme estimator and flexible parametric model on excess mortality to estimate Net Survival (NS) according to age at diagnosis, gender and 10 years-period of diagnostic, and at different time points (5, 10, 20 years).

Results: Incidence rate was 0.1 in BL, 0.5 in HCL and 1.1 in MCL. The sex ratio was 2.14 in BL, 2.28 in MCL and 3.17 in HCL. Median age was 59.3 y-o in BL, 60.7 in HCL and 72.45 in MCL. The incidence rates raise of 5.9%/y in MCL ($p < 0.001$). Survival was better in younger patients the three entities. It was better in women at 5, 10 and 20 years in BL and HCL but not in MCL. NS at 10 and 20 years were respectively 79.5 and 77.5% in HCL; 42.0 and 15.9% in BL and 50.0 and 41.2% in MCL. An increase of survival was found in HCL (10-y OS: 53.3 to 63.2%) and in BL (25 to 50%) but a decrease was found in MF (56.1% to 32.5%).

Conclusion: These data emphasise important facts such as the major increase of incidence of MCL in older patients in which survival was decreasing that point out the questions to be addressed.

Keywords: Incidence, survival, Rare diseases, Lymphoid proliferations

Intelligent Automation in Population-Based Cancer Registration: A Novel AI-Driven Platform for Streamlined Data Processing and Multi-Level Quality Control *(2025 April Fritz – IACR Prize Awardee)*

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Background/ Purpose: Population-based cancer registration faces challenges in processing massive multisource data (e.g., raw case reports, death certificates, insurance claims) due to labor-intensive manual coding, deduplication, and quality control. Traditional workflows are error-prone and time-consuming, hindering timely reporting and analysis.

Methods / Approaches: We developed an AI-driven big data platform integrating multi-source datasets with intelligent automation. The platform architecture features four innovations: 1) AI-enhanced data management using natural language processing for automated address completion, ICD-O-3 coding via deep learning models, and real-time logic validation; 2) Hierarchical workflow optimization enabling district-level automated processing (about 80% of cases) while reserving manual review for complex cases at municipal/provincial levels; 3) Dynamic quality metrics generating real-time statistics (e.g., incidence/mortality rates, morphology verification, mortality to incidence ratio) through interactive dashboards; 4) Closed-loop follow-up system that pushes case information to corresponding grassroots medical institutions based on address data and triggers automated follow-up reminders.

Results: In pilot implementation across 78 districts, the platform reduced manual processing time by 63% and improved coding accuracy to 98.2% (vs. 85.7% pre-AI). Duplicate detection sensitivity reached 99.4%, resolving longstanding challenges in multi-source data integration. The statistics module enables real-time visualization of regional cancer epidemiology trends, significantly enhancing data utilization efficiency. The follow-up module improves case traceability through timely allocation to grassroots units, achieving a 11% increase in follow-up completion rates and 14% higher data accuracy in pilot regions. Crucially, the system achieved WHO/IACR-compliant data outputs while maintaining adaptability to China's decentralized registration framework.

Conclusion: This study pioneers an intelligent multilevel system that transforms cancer registration from fragmented manual workflows to AI-enhanced, collaborative processes. By balancing automation with human oversight, it ensures scalability without compromising data integrity. The platform's modular design enables global customization for diverse healthcare systems, addressing critical gaps in cancer data infrastructure.

Keywords: Artificial Intelligence, Multi-source Data Integration, Hierarchical Quality Control, Closed-loop Follow-up System, Real-time Cancer Epidemiology

When Data Speaks, Action Follows: A Registry-Driven Philanthropic Model For Cervical Cancer

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Background/ Purpose: Cervical cancer remains a major health burden in low- and middle-income countries (LMICs), where late-stage diagnosis and lack of access to treatment are common. At Rajiv Gandhi Cancer Institute & Research Centre (RGCIRC), New Delhi, hospital-based cancer registry (HBCR) data from 2017–2019 revealed that only 30% (316/1080) of cervical cancer patients received treatment. This gap prompted the development of an innovative, registry-driven philanthropic model to improve treatment access. Survival outcomes for cervical cancer are comparatively good even when treatment is initiated at late stages, underscoring the importance of timely intervention regardless of disease progression.

Methods / Approaches: Using HBCR data, RGCIRC designed a model with structured financial navigation. Patients identified through the registry were referred to the Department of Philanthropy by treating doctor. They were assessed for socio economic status and eligibility under various financial schemes of government , NGO and corporate social responsibility (CSR) initiatives of public sector and private companies. Registry metrics were used to guide resource allocation and monitor outcomes.

Results: Prior to intervention, the treatment rate was 30%. Following the introduction of the registry-driven philanthropic model in 2019, the treatment rate increased to 71% by 2024. Over USD 6.22 million was mobilized from 2020–2024, supporting treatment of patients. The registry enabled precise targeting of aid and measurable evaluation of impact, enhancing the efficiency and sustainability of the model.

Conclusion: This registry-driven philanthropic model exemplifies how cancer registries can move beyond data collection to drive health equity and innovation. By translating data insights into actionable policy, the model significantly improved treatment access. It offers a scalable, replicable solution for cancer hospitals in LMIC facing similar care gaps, reinforcing the role of registries as engines for action and reform. This approach can be adapted in other countries with similar healthcare disparities, particularly where cancer care is constrained by financial and infrastructural limitations.

Keywords: Cervical Cancer, Philanthropic Model, LMIC, Cancer Registry

Update On The Algerian Network Of Cancer Registries: Assessing Cancer Incidence And Mortality Nationwide In 2022

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Background/ Purpose: The first population-based cancer registries were implemented in Algeria in the mid-1980s. Since then, registry coverage of the population has continuously increased, to reach 97% in 2022. We present estimates of cancer incidence, mortality, and geographical disparities, based on data from the Algerian Network of Cancer Registries (ANCR).

Methods / Approaches: Cancer data are collected in an active mode nationwide. The incidence date is defined according to the algorithm of the European Network of Cancer Registries, and the International Classification of Diseases for Oncology (ICD-O-3) is used to define morphology. Data entry, validation and analysis are carried out using CanReg5 software from the International Agency for Research on Cancer. Standardized incidence and mortality rates, expressed per 100,000 are presented.

Results: In 2022, 51,091 new cancer cases were recorded. The male-to-female sex-ratio was 0.78. The SIR was 130.6 in men and 152.2 in women. The most common cancer sites in men were lung (19.5), rectum (18.2), and prostate (15.5), and in women, breast (61.9), rectum (15.9), thyroid (7.9). In 2022, 37,778 cancer deaths were recorded, giving a standardized mortality rate of 77.7 (82.7 in men and 73.1 in women). The three leading causes of cancer deaths in men were lung, colorectal and bladder cancer, and in women, breast, colorectal and cervical cancer. Geographical disparities were observed, with the highest SIRs observed in the East region, and the lowest SIRs observed in the West region, with the exception of lung and cervical cancers, with the highest SIRs were observed in the West of the country.

Conclusion: The ANCR has provided a better understanding of cancer morbidity, mortality, and geographical disparities in Algeria. Cancer data accumulated over several years provide opportunities for descriptive, analytical and evaluative epidemiological research.

Keywords: Cancer registries ; national network ; cancer incidence ; Algeria.

Smoking Cessation In The Netherlands Can Prevent Over 120.000 Cancer Diagnoses In 22 Years' Time

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Background/ Purpose: Annually, 14,000 people in the Netherlands are diagnosed with lung cancer, 6800 with bladder cancer and 2700 with esophageal cancer. A significant share of these diagnoses is caused by smoking tobacco. The Dutch National Cancer Control Program (NCCP) aims for only 5% of adults and no minors to smoke by 2032. To emphasize this ambition's importance, we used Netherlands Cancer Registry (NCR) data combined with other data to calculate the number of future preventable cancer diagnoses if these targets are met.

Methods / Approaches: The future number of lung, bladder and esophageal cancer diagnoses were calculated with the Dynamo-HIA model and forecasted demographic data (Statistics Netherlands), recent cancer incidences (NCR) and excess mortality (Statistics Netherlands), tobacco smoking prevalence data (Trimbos), and the relative risks of smoking for cancer incidence and overall mortality (literature). For 2024-2045, we compared 1) a reference scenario with an anticipated slightly declining trend in smoking behavior to 2) a stronger decline – in which only 5% of adults and no minors smoking by 2032. Additionally, for 2024-2100, the impact of a tobacco-free generation was determined for those currently aged 5-11, by comparing the reference scenario with one in which none of these minors ever start to smoke.

Results: Achieving the Dutch NCCP's ambition prevents 88,948 lung, 16,589 bladder and 14,721 esophageal cancer diagnoses in the period 2024-2045. A tobacco-free generation prevents 48,787 lung, 10,538 bladder and 6538 esophageal cancer diagnoses during the life of the current 5-11 year olds.

Conclusion: By employing cancer registry data combined with data from other sources, the significant impact of the Dutch NCCP's ambition for smoking cessation was shown. In 22 years' time, over 120,000 lung, bladder and esophageal cancer diagnoses are preventable. Moreover, more than 65,000 lifetime cancer diagnoses can be prevented in today's 5-11 year olds alone, by a tobacco-free generation.

Keywords: Prevention, Smoking tobacco, Scenario's, National Cancer Control Program (NCCP)

Health Behaviors And Socioeconomic Factors Associated With Pap Smear Screening Among Women Living In Martinique

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Background/ Purpose: In the overseas territories, there is an underuse of screening, particularly Pap smear screening. To date, no study has assessed the impact of social, cultural and economic factors on the uptake of cervical cancer screening among women living in Martinique.

Methods / Approaches: We used a mixed method design to adapt the data collection in the French West Indies context entitled ‘Exploratory Sequential Mixed Method Design. It combines qualitative (individual/collective interviews) and quantitative studies (general population questionnaire).

Results: In the quantitative phase, 952 women were included, and the final weighted analyses were carried out on 891 women. The mean age was 46.5 years (SD = 11.0). 78.7% of women reported being up to date with their Pap smear screening. Factors associated with being up to date with smear screening were: having a high income (AOR 1.56 [1.04-2.33]), having at least one child (AOR 2.65 [1.67; 4. 19]), having consulted a GP in the last 12 months (AOR 1.75 [1.06 ;2.89]), and having efficient health literacy (AOR 2.08 [1.43 ;3.04]). In the qualitative phase, 53 iterative individual interviews were conducted (19 women and 2 men), added by 2 gendered focus groups (14 women and 11 men). Thematic analysis showed that social vulnerability, limited access to the healthcare system and violence interact to influence cervical pap smear screening behaviour.

Conclusion: This original combined study has enabled us to better understand the importance of pap smear screening for cervical cancer in the French West Indies. Interventions are required to promote the active management of women's health, in particular through better information on screening and, more generally, by promoting access for all women concerned to healthcare resources. Gender-based and sexual violence are factors to be integrated within medical

interventions to improve access to care and strengthen prevention policies in the French West Indies.

Keywords: Mass Screening, Uterine Cervical Neoplasms, Caribbean Region, mixed method design

Over One-Third Of Cancer Cases And Two-Fifths Of Cancer Deaths In Southern China Are Preventable: Insights From The Latest Representative Population-Based Cancer Registry Data And Risk Factor Survey

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Background/ Purpose: Assessing the impact of modifiable risk factors on cancer is crucial for prioritizing effective prevention and control measures. This study aimed to quantify the cancer burden attributable to modifiable risk factors in Guangdong Province, China, thereby informing the development of targeted region-specific cancer prevention strategies.

Methods / Approaches: The population attributable fraction (PAF) was estimated by Levin's method, based on 2010 prevalence data for 15 risk factors and corresponding representative relative risks. The 95% confidence intervals for PAFs were estimated by delta method or bootstrap simulation. Attributable cancer cases were then calculated by PAFs and 2019 cancer burden data from the population-based cancer registry.

Results: In 2019, 34.92% of incident cancer and 43.91% of cancer deaths among adults could be attributed to 15 selected risk factors, with higher PAF among males than females. Nine of the 22 cancers exhibit PAFs that exceeded 50%, with 4 cancers exceeding 70%, including cervix uteri (96.88%), nasopharyngeal (87.57%), oral cavity/pharynx (71.72%), and liver cancers (70.81%). Among risk factors, the greatest PAFs were for smoking (16.02%), alcohol (9.08%), HBV (7.02%) in males and HPV (5.96%), diabetes (4.11%), low fruit intake (3.26%) in females. Unhealthy behavior-related risk factors caused the highest proportion of incident cancer burden (15.26% in incident cases and 21.17% in deaths), followed by social development-related risk factors (14.72% in incident cases and 17.61% in deaths), and infection-related risk factors (12.62% in incident cases and 16.03% in deaths).

Conclusion: Nearly one-third of new cancer cases and two-fifths of cancer deaths in southern China were preventable through addressing modifiable risk factors. The findings emphasize the critical need for targeted prevention strategies, particularly focusing on smoking, alcohol consumption, and infection control, to significantly reduce cancer burden. This study underscores the importance of integrating risk factor mitigation into public health policies to advance cancer prevention efforts in the region.

Keywords: Cancer, Population Attributable Fraction (PAF), Risk Factor, Southern China

Cancer Recurrence, Progression And Transformation– New ENCR Guidelines For Population-Based Cancer Registries.

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Background/ Purpose: To present for wider consultation and information standardised data items and rules for recording cancer recurrence, progression and transformation (RPT) adopted 2025 by European population-based cancer registries (PBCRs).

Methods / Approaches: Experts from 14 European countries worked under direction of the European Network of Cancer Registries to define RPT for solid and haematological malignancies and establish standardised variables and coding formats for PCBRs.

Results: Definitions: Cancer recurrence = cancer return after disease-free period post tumour-reductive treatment (TRT) where the cancer had a complete clinical or microscopic treatment response. Cancer progression = increased disease load post TRT without verified complete therapy response. Transformation = diagnosis of more aggressive morphology following indolent disease. TRT excludes maintenance therapies and active surveillance. A raised PSA requires clinical or other evidence to be considered RPT. Definitions apply to solid tumours with malignant behaviour code 3 and all urothelial and CNS tumours irrespective of tumour behaviour when first diagnosed. Easy to follow algorithms separate for solid and haematological cancers and a tiered approach to data collection were developed and will be presented The official protocol is available at https://www.encr.eu.

Conclusion: This provides PBCRS with definitions and pathways to enable collection of RPT data for cancer control, health-care planning, quantifying service needs and outcomes for this increasing cancer patient group. Research opportunities include targeted treatment strategies, genomics and biomarker discovery to support personalised medicine and early detection surveillance strategies directed at risk factors for RPT.

Keywords: Cancer, recurrence, progression, guidelines, ENCR

Availability Of TNM Stage In European Cancer Registries Within The European Cancer Information System, With A Focus On Six Major Cancers

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Background/ Purpose: Reporting of stage at diagnosis in cancer registries (CRs) is relevant to monitor cancer burden and survival. There is scarce information on the availability of stage in European CRs.

Methods / Approaches: Within the European Cancer Information System (ECIS) data call 2022, we mapped the availability of TNM stage reported by population-based CRs affiliated to the European Network of Cancer Registries (ENCR). The analysis focused on six cancers (i.e. gastric, colorectal, lung, breast, cervical, and prostate) and incidence data from 1990 onwards. TNM stage distribution was analysed for breast cancer.

Results: In 1990-2022, 63 CRs from 15 European countries reported TNM stage at diagnosis. For the six cancers, many countries showed improvements in reporting TNM stage across years. In 2017-2019, TNM classification was available for 57% of gastric, 70% of colorectal, 70% of lung, 74% of breast, 61% of cervical, and 64% of prostate cancers. In most countries, cases with stage was over 80% for colorectal, breast, and cervical cancers, and over 70% for gastric, lung, and prostate cancers; however, still low TNM stage recording (< 50%) was observed in Italy, Spain, and Romania. Stage I breast cancer increased between 1990 and 2022 in most countries, with corresponding decreases in stage II/III cancers. In 2017-19, stage I breast cancer varied across countries from 31% to 52%, stage II from 32% to 41%, stage III from 7% to 20%, and stage IV from 6% to 9%.

Conclusion: For the six cancers, reporting of stage at diagnosis improved in many European countries, with a high proportion of cancers staged over recent years, but a high potential for improvement remains in few countries. Temporal and geographic patterns in stage distribution provide useful insights into the effect of different screening/diagnostic practices across Europe. ECIS and ENCR should further help European CRs enhancing collection and reporting of cancer stage.

Keywords: cancer-registry, stage, availability, trends, breast cancer

Cancer RADAR – Mapping Cancer Risk Among Individuals With a Migration Background Across Europe

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Background/ Purpose: The WHO Action Plan for Refugee and Migrant Health calls for strengthened migration health governance and data-driven policymaking. However, the lack of systematically collected, comparable health data among migrants remains a critical barrier. About 12% of the European population (87 million) has a migration background, and migrant cancer risk can differ significantly from both their birth and host countries. Cancer RADAR explores the feasibility and methodology to fill this gap by mapping infection-related (liver, stomach, cervical) and screening-detectable (cervical, breast, colorectal, lung) cancer risks among individuals with a migration background across Europe.

Methods / Approaches: In collaboration with pilot cancer registries, we co-created a protocol to systematically collect cancer data stratified by birth country, a proxy for first-generation migration background. Through a survey we investigated which registries have such data available. Using data from 4 pilot registries (Turin, Murcia, Tarragona, Ticino), we characterized the cancer risk stratified by migration background.

Results: Cancer data stratified by country of birth are available from 47 cancer registries and, through data linkage, from 7 additional registries across 20 European countries. Data from pilot registries confirm similar or lower age-standardized incidence rates (ASIR) for breast and colorectal cancer, and increased ASIRs for infection-related cancers. For example, in the case of cervical cancer, we observed that a large proportion (> 75%) of migrant women have a risk that is 1.5 times higher than that of the host population. Additionally, we found that the cervical cancer risk among migrant women lies between the risk levels observed in their country of birth and those in the host population. This pattern was not observed in Ticino

Conclusion: This pilot study demonstrates the feasibility of quantifying and monitoring cancer risks among migrants to provide actionable evidence for data-driven policymaking aimed at reducing health inequalities.

Keywords: Migrant studies, Screening, Cancer Mapping

Interface Between Hospital-Based And Population-Based Cancer Registries: The Brazilian Experience

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Background/ Purpose: Brazil has established a national system for cancer data collection through hospital-based cancer registries(HBCR) and population-based cancer registries(PBCR), both of which are essential for guiding cancer control. While each registry type serves a distinct purpose, linking and integrating data from both systems is crucial for generating comprehensive, timely, and high-quality cancer data. This study aimed to describe the Brazilian experience in integrating HBCR and PBCR data and the correlation with timeliness.

Methods / Approaches: We analyzed data from the most recent five-year period reported by 31 PBCRs in Brazil. For each registry, we calculated the proportion of cases imported from HBCRs, and the average number of data sources per case. Timeliness was assessed as the difference between the most recent year with available data and the calendar year(2025).

Results: As of 2025, the 31 active PBCRs cover approximately 25% of the population. More than 330 HBCRs mostly from public institutions are integrated into the cancer surveillance system. On average, 47%(ranging from 11.8% to 83.4%) of PBCR cases were imported from HBCR. The average number of sources per case was 1.26. Correlation between the percentage of imported cases from HBCR and timeliness was weak(Pearson's coefficient=0.30).

Conclusion: Despite the extensive registry network and the possibility of importing data, the use of HBCR data by PBCRs remains variable and generally suboptimal. This is evidenced by the low number of data sources per case and inconsistencies in data quality. Timeliness remains a major challenge. Additionally, data quality vary across HBCRs, which can affect the reliability of data importation. Overcoming these barriers requires systemic reforms, such as integration across health information systems, legislation to clearly define institutional responsibilities, structured training programs for cancer registrars, and the phased expansion of sentinel PBCRs. These efforts will strengthen and integrate Brazil's cancer registry infrastructure to better support cancer control planning, policy, and research.

Keywords: population-based cancer registry, hospital-based cancer registry, data quality, timeliness, data integration

Short-Term Breast Cancer Survival 2015-2018 In 35 Countries World-Wide, By Age, Stage And Subtype (VENUSCANCER)

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Background/ Purpose: The VENUSCANCER project aims to investigate whether world-wide inequalities in survival for women's cancers are attributable to differences in disease biology between populations, or patterns of care, or socio-economic status. Here, we examine short-term net survival world-wide, by age, stage and subtype, for women diagnosed with breast cancer.

Methods / Approaches: Population-based cancer registries provided a single year of incidence during 2015-2018, with complete data on high-resolution variables (e.g., stage, treatment). We grouped age in four categories (15-39, 40-49, 50-69 and 70-99 years), stage in six categories (early, node-negative disease (T1N0M0), larger node-negative (T2-3N0M0), node-positive (T1-3N+M0), locally advanced (T4 any N M0), metastatic (M1), and unstaged) and tumour subtypes in five categories (ER+/HER2-, ER+/HER2+, ER-/HER2+, ER-/PR-/HER2- and unknown). We estimated net survival up to three years, using the Pohar Perme estimator, age-standardised with the International Cancer Survival Standard weights.

Results: We received anonymised individual records for 207,101 women from 93 registries in 37 countries. The proportion of ER+/HER2- was higher than 70% in most countries, but lower in Latin America (50-58%). ER-/PR-/HER2- tumours ranged from 5% (Belgium) to 19% (Brazil). Women aged 15-39 years were generally diagnosed with a higher proportion of ER-/PR-/HER2- disease (range 15-25%) than women aged 50-69 years (5-18%). Younger women showed a less favourable stage distribution than older women (T1N0M0: 20-35% vs. 30-57%). Age-standardised 3-year net survival for ER+/HER2-, and ER+/HER2+ and ER-/HER2+ breast cancer was in the range 94-97%, 80-94%, and 81-88%, respectively, in all countries. Survival for women with ER-/PR-/HER2- tumours was lower in all countries (71-86%). Three-year survival was above 95% for node-negative breast cancer in most countries. It ranged from 88% (Thailand) to 98% (Switzerland) for node-positive, and from 29% (Thailand) to 61% (South Korea) for metastatic disease.

Conclusion: VENUSCANCER provides the first global picture of stage, subtype and short-term survival for breast cancer.

Keywords: breast cancer, stage, subtype, age, net survival

Breast Cancer Incidence And Stage During The Covid-19 Pandemic In The Greater Poland Region

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Background/ Purpose: The COVID-19 pandemic disrupted cancer care worldwide, altering healthcare organization, access to screening, and public health policies. To understand its full impact on oncology patients, we assessed changes in stage at diagnosis among breast cancer (BC) cases in Greater Poland.

Methods / Approaches: We analysed 8 268 invasive and in situ BC cases (both sexes) registered between 2019 and 2022. Year 2019 served as the reference. Cases without recorded stage were excluded from stage-specific analyses. Annual counts were stratified by TNM 8 clinical stage (0–IV) and age group (15–39, 40–49, 50–69, ≥ 70 years). We compared 2020–2022 incidence versus 2019 using two-sided Poisson tests; $p < 0.05$ denoted statistical significance.

Results: BC incidence fell significantly in 2020 (2 032 vs. 2 204; $p = 0.008$) and rebounded in 2022 (2 446; $p < 0.001$). In compare to 2019 the 40–49 subgroup, stage III cases rose in 2022 (40 vs. 63; $p = 0.023$), as did stage IV (13 vs. 28; $p = 0.019$). Among 50–69-year-olds, stage I diagnoses dropped in 2020 (470 vs. 378; $p = 0.002$). Patients ≥ 70 years experienced significant increases in stage II in 2021 and across all stages in 2022.

Conclusion: Declines in early-stage diagnosis are concerning, particularly the marked drop in stage I among the screening group (50–69 years) in 2020, suggesting missed early diagnoses. Rises in the number of advanced-stage (III/IV) in age groups 40-49 and 70+ in 2022 requires further studies on survival and mortality. The pattern of observed changes aligns with the overall trend in BC incidence in the analyzed period.

Keywords: cancer registry, stage, breast cancer, COVID-19, cancer screening

Cancer Registration System In Uzbekistan: Developing National Cancer Registry

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Background/ Purpose: The Cancer Registry Department (CRD) is situated in National Cancer Center (NCC) in Uzbekistan. In early 2025 the new cancer registration software is being developed with the help of IT company, NCC, WHO and IARC.

Methods / Approaches: In Uzbekistan there are 15 regional branches of NCC and 233 oncology rooms in polyclinics. The CRD in RSSPMCOR is mandated to collect data on cancer patients and act as the National Cancer Registry. Cancer registry department has at least 12 medical specialists. At least two specialists are working at the CRD in each of the regional branches.

Results: In Uzbekistan, cancer data collection system is passive, based on mandatory reporting of clinical and pathology data (ICD-10) using several forms. The new cancer registry software is being developed with the help of IT company, NCC, IARC and WHO. It is modern IT software for data collection, quality evaluation, and reporting according to international recommendations. The modules for data entry, linkage with mortality and population data have been completed and the functionalities for data consolidation and analysis/reporting at the central office are almost ready. Diagnosis morphology are coded using ICD-O. The stage is recorded using AJCC/UICC classification. Cancer registry software is linked with both the population registry and mortality database, thus reducing possible duplicate person registration and loss to follow-up. It was organized the 1st training course on cancer registry for the registrars from each region. The launch started from the beginning of 2025 within the pilot projects. NCC with the help of IARC and WHO prepare legislation document (decree), which specifies cancer registration procedures, structure, data sources, data collection, variables, data consolidation, linkages and information about staff.

Conclusion: The results of this study are shown that a lot of work have been done and there are a large number of challenges in cancer registration system in Uzbekistan.

Keywords: Cancer, cancer registration, cancer data collection system

Algerian Population-Based Cancer Registries Network Data Summary, 2022: Incidence and Main Cancer Types

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Background/ Purpose: Our goal is to provide 2022 cancer incidence statistics for Algeria and its primary locations.

Methods / Approaches: The data comes from the Algerian Population-Based Cancer Registries Network, which has been gathering 2022 cancer data from the province Population-Based Cancer Registries of all three regional networks. The three regional networks of population cancer registries give regional estimates for the incidence assessment, which are based on information gathered locally in each province cancer registry. Using IARC rules for coding, date of incidence, and multiple primary, quality data are verified locally by confirming validity and comparability. The regional networks make the second control of quality.

Results: The estimated global incidence of cancer in 2022 was 51.095 new cases in both sexes and represented a crude rate of 110.2 per 100,000, of which 28.618 were in women (56%). Regarding the distribution of the major malignancies by sex and age group, the three networks are similar, although there are some minor differences with regard to the global incidence rate. First localization in women is breast cancer accounted for 50% of all woman cancers, followed by colorectal, thyroid, and ovarian cancers. While in men, colon-rectum cancers accounted for 18% of all cancers and followed in second range by the prostate and lung cancers.

Conclusion: These findings are extremely helpful in planning the battle against cancer and formulating policies since they provide a photographic representation of the cancer burden in our country . However, both provincial and national data still require improvement in terms of quality.

Keywords: Algerian Cancer Registries Network, Descriptive Epidemiology, Incidence, Algeria, Cancer Registry

Cancer Incidence And Social Deprivation: A Spatio-Temporal Analysis In Guadeloupe

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Background/ Purpose: Social inequalities in cancer incidence are observed in all industrialized countries. However, data remain limited in French overseas territories, despite their particular social, economic, and epidemiological context. The aim of this study was to investigate the link between cancer incidence and social deprivation in Guadeloupe, a French archipelago in the Caribbean, as well as trends in social inequalities over time.

Methods / Approaches: We used data from the Guadeloupe Cancer Registry for the period 2008 to 2021 for the most frequent cancer sites. We measured social deprivation of the residence area with an index developed specifically for Guadeloupe at a fine geographical level. We performed a spatio-temporal analysis using a hierarchical Bayesian model, supplemented by polynomial regression on the time-dependent trend of the relative risks in the most deprived areas.

Results: The most deprived areas showed lower risks of lung, skin, bladder and breast cancer, and higher risks of esophageal and stomach cancer. Social inequalities tend to diminish over time for cancer sites inversely associated with social deprivation. They are stable over time for stomach cancer, and tend to increase for esophageal cancer.

Conclusion: This study highlighted the links between social deprivation and the incidence of several cancers in Guadeloupe. Some associations, notably for lung and bladder cancers, differ from what is usually observed in the literature. These differences may be explained by ethnic and lifestyle specificities. Their evolution over time could reflect changes in lifestyles.

Keywords: Cancer, Social deprivation, Spatio-temporal analysis

The Role of Cancer Registries in Advancing Lung Cancer Screening (LCS) in Middle-Income Countries (MICs)

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Background/ Purpose: Cancer registries play a decisive role in making the impact of screening visible. In high-income countries (HICs), registry data has helped demonstrate the value of lung cancer screening (LCS) by tracking shifts in stage at diagnosis, monitoring mortality trends, and addressing concerns around overdiagnosis. For example, the U.S. SEER registry showed a widening gap between lung cancer incidence and mortality following the introduction of low-dose CT (Computed Tomography) screening, indicating the value of early detection. This same capability is essential in middle-income countries (MICs), where 68% of global lung cancer deaths occur, yet no national screening programs exist. This study explores where investment in cancer registry development could support equitable global access to LCS by enabling evidence-based policy action.

Methods / Approaches: A feasibility-need framework was applied to 36 MICs and 24 HICs using data from GLOBOCAN (IARC), WHO, and national sources. Epidemiological need (incidence and mortality rates, smoking prevalence, life expectancy) and system capacity (healthcare expenditure, CT access, radiologist and physician density, GDP per capita) were combined with registry maturity assessments based on IARC standards. Countries were plotted by population, feasibility, need, and LCS implementation level (0–4).

Results: The analysis shows that many MICs, such as China, Brazil, and Türkiye, are as ready for implementation as HICs, yet remain stalled. Incomplete cancer registry systems in MICs conceal disparities in stage and outcomes, limiting policy responsiveness. HICs with mature registries, such as the U.S., have demonstrated LCS benefits and countered concerns about overdiagnosis through population-level evidence. The chart helps identify where strengthening cancer registries could enable political momentum for LCS.

Conclusion: Cancer registries are critical infrastructure, not only for evaluating screening outcomes, but for exposing inequality and initiating political action toward equitable LCS implementation worldwide. Strengthening registries is foundational to expanding LCS where it is most needed.

Keywords: Cancer registries, Lung cancer screening, Middle-income countries, Policy implementation, Health equity

Epidemiology Of Adolescent And Young Adult Cancer And Disparities In Cancer Care In Varanasi, India

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Background/ Purpose: Adolescents and Young Adults (AYAs) aged 15–39 represent a unique oncology demographic due to their distinct developmental needs. However, there is limited data on cancer burden and care disparities among the Indian AYAs. This study examines the burden, pattern, and disparities among AYAs in Varanasi, Uttar Pradesh, India.

Methods / Approaches: This study collected data from Varanasi's population-based cancer registry (PBCR) between 2017 and 2019. Data were analysed for demographic, clinical, and cancer-related variables. Sex and site-specific crude, age-adjusted, and truncated rates for incidence and mortality per 100,000 population were calculated. Gender, urban-rural, and socio-economic disparities were assessed using standardised rate ratios and multivariable regression. Adjusted ratios with 95% confidence intervals were calculated. AAIR of the leading cancer site was compared with 24 Indian PBCRs from Cancer Incidence Five data and Globocan (2022) report.

Results: Of 6,821 cancer patients, 1,105 (16.2%) were AYAs. The truncated age-adjusted incidence rate (AAIR) was 21 per 100,000 population, with mouth (16.5%), breast (12.2%), and tongue (6.2%) cancers leading. Oral cancer was the most common cancer in male AYAs, with a truncated AAIR of 9.2 per 100,000, ranking third highest among Indian PBCRs. Geographical disparities in cancer incidence and mortality among AYAs were notable. The overall AAIR was similar in urban and rural settings (21.3 vs. 20.7 per 100,000), but mortality rates were higher in rural areas (AAMR: 12.1 vs. 10.1), particularly among females (AAMR: 5.9 vs. 3.8). Socioeconomic factors influenced care utilization, with AYAs more likely to access diagnostic and definitive treatment but facing income and employment vulnerabilities.

Conclusion: This study highlights significant cancer burden and disparities among AYAs in Varanasi. Targeted screening, tobacco control policies, and region-specific interventions, especially social support schemes, are crucial to addressing these inequities and improving outcomes.

Keywords: Rural population, Gender, Health care disparities, Tobacco control, Early detection of cancer

Cancer In Sub Saharan Africa

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Background/ Purpose: Almost all that is known of the cancer profile in Africa comes from the network of population-based registries, all which that produce useable (reasonably accurate) data are members of the African Cancer Registry Network (AFCRN). The 12th edition of Cancer Incidence in Five Continents (CI5 XII) included data (from around 2012-2017) from 11 registries in sub Saharan Africa (compared with five in Volume XI). The Covid epidemic in 2020-2021 disrupted case finding in many registries, and may have compromised data quality and completeness for the period 2018-2012 (as will appear in CI5 vol XIII)

Methods / Approaches: We looked at the incidence of the most common adult cancers from 2018 to 2022 within the members of the AFCRN, focussing on those whose data appeared in CI5 XII.

Results: One longstanding contributor to CI5 (the Eastern Cape Registry of South Africa) has ceased to function, and data are incomplete from 2020/2021. Of the other registries in CI5 XII at least 5 had rates that were generally lower in 2018-2022 than in the previous five years, while one had rates that were substantially higher, suggesting better cases finding. However, preliminary analysis of data from other members of AFCRN suggests that some newer registries may quality for inclusion.

Conclusion: The issue of apparently decreasing incidence in 2020-2022 compared with earlier periods will pose problems when assessing time trends in cancer incidence. Nevertheless, it is important to publish observed results from PBCRs in sub Saharan Africa, both in CI5, and in the compendium of results from all AFCRN members (Cancer Incidence in sub Saharan Africa Vol IV) in the hope that those using the data can interpret them prudently.

Keywords: incidence, sub-Saharan Africa, 2018-2022

Spatiotemporal Analysis of Liver Cancer Considering Risk Factors: Hepatocellular Carcinoma and Cholangiocarcinoma in South Korea

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Background/ Purpose: This study aimed to develop a spatiotemporal cancer surveillance system to proactively detect high-risk areas using liver cancer, identified as a high probability of clustering in Korean men.

Methods / Approaches: The Korea National Cancer Incidence Database (1999-2018) was analyzed at the 250 administrative municipalities. Liver cancer was classified into hepatocellular carcinoma (HCC) and cholangiocarcinoma (CCA) based on risk factor profiles. A Bayesian hierarchical model was applied to identify clusters and assess associations with regional risk factors.

Results: Liver cancer incidence has steadily declined over the past 20 years. However, when stratified, HCC and CCA exhibited distinct temporal trends and spatial distribution patterns. While HCC declined, CCA incidence increased. Among men, the risk ratio (RR) for HCC in Jindo-gun decreased from 2.33 (1999–2003) to 1.77 (2014–2018) but remained the highest nationwide. Among women, Jindo-gun had the highest RR of 2.15 in 1999–2003, while Namhae-gun had the highest in 2014–2018 (RR = 1.37). For CCA, Miryang-si showed increasing risk in both men (from 2.30 to 2.59) and women (from 1.31 to 1.79). Proximity to the Nakdong River (within 20 km) was significantly associated with CCA incidence in both men ($\beta = 0.170$; 95% CrI: 0.056–0.282) and women ($\beta = 0.159$; 95% CrI: 0.055–0.263). No significant associations were found between CCA and smoking or alcohol use. In contrast, HCC showed sex-specific behavioral associations: smoking in men ($\beta = 0.050$; 95% CrI: 0.029–0.070) and high-risk alcohol use in women ($\beta = 0.054$; 95% CrI: 0.016–0.092) were significant.

Conclusion: Stratifying liver cancer by risk factors revealed distinct spatial patterns and etiologic heterogeneity between HCC and CCA, which were not observable under conventional ICD-O classifications. These findings support integrating behavioral and environmental data into cancer surveillance and targeting region-specific epidemiological investigations and interventions in newly identified high-risk areas.

Keywords: Liver cancer, Incidence, South Korea, Hepatocellular carcinoma, Cholangiocarcinoma

Fighting Cancer in Albania: A Health System Under Pressure

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Background/ Purpose: Cancer has become the second leading cause of death in Albania, following cardiovascular disease. The increasing burden of cancer poses a significant challenge to the national healthcare system, particularly in terms of diagnosis, treatment capacity, and long-term care.Aim:This study aims to assess cancer incidence and mortality trends in Albania from 2015 to 2022, using population-based registry data to support effective planning and implementation of national cancer control programs.

Methods / Approaches: Data were extracted from the Albanian National Cancer Registry, which collects incidence data from public and private healthcare institutions. Mortality data were obtained from the Albanian Institute of Statistics (INSTAT). A retrospective analysis was conducted on cancer incidence and mortality trends over the eight-year period.

Results: A total of 46,685 cancer cases were reported from 2015 to 2022, averaging 5,836 new cases annually. Gender distribution was 53% male and 47% female. The most prevalent cancers were lung (12%), breast (12%), colorectal (7%), and bladder (6%), followed by stomach cancer, cancers of the sinuses and nasopharynx (SNQ), and leukemia (each ~4%).Cancer accounted for 15% of all deaths, with an average age of death at 70 years. Lung cancer remains the leading cause of cancer-related death in men, while breast cancer leads in women.Radiotherapy services, supported by the International Atomic Energy Agency (IAEA), have contributed to improved cancer outcomes. The age-standardized mortality rate declined from 89.4 per 100,000 in 2015 to 67.4 in 2022. Premature mortality (ages 30–69) also dropped from 135.2 to 112.2 per 100,000 in the same period, showing progress in cancer control efforts.

Conclusion: Albania's cancer burden closely resembles that of other developing countries, driven by modifiable risk factors such as tobacco use and limited access to early detection. Continued investment in screening programs, prevention strategies, and access to treatment is essential to further reduce the cancer burden.

Keywords: Cancer burden, mortality trends, cancer registry, public health

POSTER PRESENTATIONS

Temporal Trends In Gynaecological Cancers In A Northeastern Brazilian State: A 22-Year Population-Based Study

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Background/ Purpose: This study analysed trends in incidence and mortality for cervical, uterine, and ovarian cancers in Sergipe, a northeastern Brazilian state with a medium Human Development Index (HDI), between 1996 and 2017, aiming to assess progress and remaining challenges in women's cancer control.

Methods / Approaches: : Population-based data were obtained from the Aracaju Cancer Registry and the Brazilian Mortality Information System (SIM). Cases were classified using ICD-10 codes: C53 for cervical, C54 and C55 for uterine, and C56 for ovarian cancer. Age-specific incidence and mortality rates were calculated for the following age groups: 20–44, 45–64, and 65 years and over. Additionally, age-standardised incidence and mortality rates (ASIR/ASMR per 100,000 women) were computed using the World Standard Population. Temporal trends were assessed using Joinpoint Regression, with results presented as Annual Percentage Change (APC) and Average Annual Percentage Change (AAPC). Statistical significance was set at $p < 0.05$.

Results: There were 4,214 new cervical cancer cases and 1,358 related deaths, with ASIR declining from 33.7 to 13.3 per 100,000 women (APC: -5.2; $p < 0.05$). Cervical cancer mortality initially increased (1996–2003, APC: 6.9; $p < 0.05$), then declined (APC: -1.9; $p < 0.05$), but continued to rise among women aged ≥65 (AAPC: 1.8; $p < 0.05$). Uterine cancer accounted for 1,200 new cases and 746 deaths, with stable incidence but increasing mortality (AAPC: 3.1; $p < 0.05$); 62% of deaths were due to unspecified uterine cancer. Ovarian cancer comprised 1,059 new cases and 488 deaths, with stable incidence but rising mortality (AAPC: 3.9; $p < 0.05$); incidence declined among women aged 45–64 (APC: -1.6; $p < 0.05$).

Conclusion: These findings demonstrate progress in cervical cancer prevention but persistent challenges in reducing mortality for uterine and ovarian cancers, underscoring the need for improved diagnostics and expanded treatment access in medium-HDI settings.

Keywords: Incidence, Mortality, Cancer, Gynecologic neoplasms, Brazil

Effectiveness Of Large Language Models For Automated Data Extraction In Cancer Registries: A Validation Study

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Background/ Purpose: Cancer registration data plays a crucial role in planning and assessing cancer prevention and control strategies. However, many cancer registries in low-middle income countries, including China, still rely on manual abstraction from unstructured electronic health records (EHRs). We evaluated the feasibility of using a locally deployed large language model (LLM) pipeline to automate the extraction of key cancer registration data variables, including topography and morphology codes defined in ICD-O-3.

Methods / Approaches: We developed an information extraction pipeline based on the DeepSeek and Qwen large language models, integrating retrieval-augmented generation, an ICD-O-3 tumour-coding knowledge base, and an agent designed for step-wise reasoning. We applied this system to electronic health records (EHR) to extract key cancer registration variables, including name, identifiable information, age, sex, date of birth, date of diagnosis, and ICD-O-3 topography and morphology codes. We compared the information with the information which was manually abstracted by experienced cancer registration staff. We checked the data quality using IARCcrgTools.

Results: The pipeline was applied to a dataset comprising 130 patient records. It achieved 100% accuracy in extracting patient’s name, identifiable information, age, sex, and date of birth. The accuracy of ICD-O-3 coding, including topography, morphology, behavior, and grade, reached 98.47%, which was higher than the accuracy abstracted by the cancer registration staff. The accuracy for date of diagnosis was 78.1%.

Conclusion: A large language model–based workflow can achieve ICD-O-3 coding performance better than expert registrars, while substantially reducing manual abstraction effort. Broader adoption of such approaches has the potential to accelerate data capture and enhance the completeness and quality of cancer surveillance systems.

Keywords: Artificial intelligence, Cancer registration, Large language models, Data abstraction, Electronic health records

Rarest Hematological Malignancies In Adolescent And Young Adult In A French Department

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Background/ Purpose: We report here epidemiological data on rarest hematological malignancies from 40 years of registration i.e. acute lymphoblastic and myeloblastic leukemias (ALL, AML), Diffuse large B cell lymphoma (DLBCL) and Hodgkin lymphoma (HL) in adolescent and young adults population.

Methods / Approaches: Cases diagnosed in the population of 15 to 39 y-o in Côte d'Or, France, between 01/01/1980 and 31/12/2019 were coded according to ICD-O-3 classification. Entities were described by age at diagnosis, sex-ratio, European population standardized incidence, overall and net survival. We used Poisson regression to assess the mean variation of the incidence rate, Kaplan Meier method and Cox model to estimate overall survival (OS) and the Pohar Perme estimator and flexible parametric model on excess mortality to estimate net survival (NS) according to age at diagnosis, gender and 10 years-period of diagnostic, and at different time points (5, 10, 20 years).

Results: Incidence rate was 0.2/100 000inh/year in ALL, 0.4 in AML, 0.5 in DLBCL and 1.4 in HL. The sex ratio was 0.74 in AML, 1.18 in HL, 1.39 in DLBCL and 2.69 in ALL. Median age of occurrence was 26 y-o in ALL and HL, 29 in AML and 31 in DLBCL. The incidence remained stable since 1980. Survival was better in younger patients in all entities. It was better in women than in men at 5, 10 and 20 years in AML, HL and DLBCL but it's opposite in ALL. OS were close to NS that were respectively at 10 and 20 years, 91.6 and 87.4% in HL, 79.2 and 77.6% in DLBCL; 51% in ALL and 46.5 and 42.4% in AML. An increase of survival was found in all entities, particularly important in ALL and HL.

Conclusion: These data emphasise the scientific attention needed to in ALL and AML in this population

Keywords: Hematology, Adolescent, Young adults, Incidence, Survival

Comorbidity Patterns In Patients Newly Diagnosed With Colorectal Cancer : A Population-Based Study In Algeria, 2004-2023

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Background/ Purpose: Since the mid-1980s, Algeria has undergone an epidemiological transition marked by a continuous increase in the prevalence of non-communicable diseases (NCDs). Colorectal cancer (CRC) is a major public health concern. However, little is known about NCDs associated with CRC. We carried out an investigation to estimate the prevalence of NCDs in patients newly diagnosed with CRC, in the province of Bejaia, Algeria, during the period 2004-2023.

Methods / Approaches: Data were collected retrospectively from medical records and pathology reports. We estimated the prevalence of NCDs associated with CRC, in men and women, and for colon and rectal cancers.

Results: Between 2004 and 2023, 1 272 CRC cases were diagnosed, of which 772 (60,7%) were located in the colon. The mean age at diagnosis was 60,6±14,5. For colon and rectal cancers, NCDs were dominated by arterial hypertension (AH) (23,5% and 21,6%; p=0,45), and type 2 diabetes (T2D) (15,2% and 17,4%; p=0,29). Multimorbidity was present in 17,7% and 17,6% of patients; p=0,90). Over the studied period, the prevalence of AH increased from 12,8% to 29,3% (p=0,002) for colon cancer and from 9,1% to 28,0% (p < 0,001) for rectal cancer, while the prevalence of T2D rose from 6,4% to 20,2% (p < 0,001) and from 8,0% to 24,0% (p < 0,001). The prevalence of multimorbidity also increased (8,5% to 21,1%, p=0,06, and 4,5% to 22,1% (p=0,03)). The prevalence of AH rose from 10,0% to 24,0% in men (p=0,01), and from 15,8% to 35,0% in women (p < 0,001), and that of T2D from 2,0% to 20,2% (p < 0,001) in men, and from 10,5% to 23,8% (p=0,06) in women.

Conclusion: The prevalence of AH and T2D in CRC patients exceeds that estimated in the Algerian general population. More research efforts are needed to understand the needs of CRC patients, and develop tailored interventions to improve outcomes.

Keywords: colorectal cancer ; non-communicable diseases ; comorbidity ; multimorbidity ; prevalence.

Evaluating the Impact of Early Detection Programs on Breast Cancer Stage Distribution in Kyrgyzstan

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Background/ Purpose: Population-based cancer registries play a critical role in cancer control programes. Quality-based monitoring helps to ensure the advancement of prevention programs, identify vulnerabilities and adjust the necessary measures. Breast cancer remains the most frequent malignancy among women in Kyrgyzstan. From 2020 to 2023, early detection programs were implemented in several regions, aiming to increase stage I–II diagnosis. This study's goal was to evaluate the effect of these programs using population-based cancer registry (PBCR) data.

Methods / Approaches: PBCR data from 2019–2023 for Chui, Talas, and Batken regions were analyzed. We assessed stage distribution trends and compared them with pre-intervention years. Staging of cancer cases was carried out according to the TNM-7 classification. Stage-specific detection rates and sex-stratified mortality were calculated. The data analysis was done in R and Microsoft Excel software. Deaths were supplemented to the database from information received from the Ministry of Digitalization of the Kyrgyz Republic.

Results: Across all three regions, over 55% of breast cancer cases were diagnosed at stage II or later. In Chui, the proportion of stage I cases increased modestly from 3.5% (2019) to 7.2% (2023), while stage III–IV cases declined only marginally. Mortality in Batken and Talas remained disproportionately high in women aged 40–59. No statistically significant shifts in early-stage detection were observed in the registry data.

Conclusion: Current early detection efforts show limited measurable impact on breast cancer staging. Barriers include lack of equipment, insufficient coverage , and poor adherence to referral protocols. The lack of a system for tracking positive results from primary health care or a case with suspected cancer is also a barrier to diagnosis and timely registration of cancer cases. Registry-based evaluation is critical for tracking progress and directing future resource allocation.

Keywords: Breast cancer, Cancer Registry, Surveillance

Impact Of Reimbursement On The Utilisation Of Gene Expression Profiles, Mammaprint And Oncotype DX, And Chemotherapy Decision-Making In Dutch Breast Cancer Patients: A Population-Based Study

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Background/ Purpose: Gene expression profiles (GEPs) have emerged as a supportive tool in the decision-making process regarding chemotherapy application in breast cancer, while reimbursement policies have evolved over time. This study investigated the extent to which reimbursement of GEP tests affected the likelihood of receiving a GEP and chemotherapy.

Methods / Approaches: Women ≥18 years diagnosed with primary invasive non-metastatic breast cancer between January 2011 and April 2024 were selected from the Netherlands Cancer Registry (NCR). Flowcharts summarized GEP-use, and detailed GEP outcomes alongside chemotherapy receipt. Trends were analysed by incidence year and region. Descriptive statistics compared patient-, tumour-, and treatment-related characteristics across MammaPrint, an Oncotype DX, or no GEP groups using the Chi-squared test. Logistic regression analyses were conducted, adjusting for age, tumour size, lymph node involvement, region, and tumour grade.

Results: A total of 183,071 patients were identified from NCR. Of the 27,396 patients (15.0%) who were eligible for a GEP, 3,916 patients (14.3%) received a MammaPrint and 841 patients (3.1%) received an Oncotype DX. Among patients who did receive a GEP, 7,667 (56.5%) had low risk results, of whom 7,182 (93.7%) did not receive chemotherapy. The GEP-use differed across regions in the Netherlands. Patients were less likely to receive a MammaPrint when there was reimbursement (odds ratio [OR]: 0.54). In contrast, patients were more likely to receive an Oncotype DX when there was reimbursement (OR: 18.64).

Conclusion: Despite reimbursement, less than a quarter of eligible patients actually receive a GEP, and regional disparities persisted. The results of this study provide valuable insights for patients and clinicians, suggesting that the process following eligibility for reimbursement needs to be improved to achieve good implementation. This could eventually support more effective and personalised chemotherapy decision-making in breast cancer patients.

Keywords: Breast cancer, Gene Expression Profile, MammaPrint, Oncotype DX, Chemotherapy

Enhancing Real-Life Data In Insular Territories

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Background/ Purpose: The digital maturity of the Caribbean region, particularly in terms of data dematerialization and access, varies greatly from one territory to another, which limits its overall digital autonomy, and therefore its capacity for anticipation and resilience. Within the framework of the INTERREG VI Caribbean program and based on the international expertise of the Martinique Cancer Registry, we develop an innovative concept for the development of skills in data-driven innovation and research: the SAVOIR concept. The aim is to create and consolidate a common space for massive data in the Caribbean, and to provide multi-disciplinary answers.

Methods / Approaches: Structured around a partnership with the Martinique Clinical data Warehouse, a Colombian Hospital Registry and the IACR Caribbean Cancer Registry Hub, SAVOIR offer a continuum to cooperative activities. We use sources of multilingual, massive and heterogeneous data (clinical surveillance, environmental, epidemiological and socio-demographic data, etc.), which are currently under-exploited, to develop epidemiological preparedness in the Caribbean.

Results: As a data-driven expert, the region will adopt a global, pragmatic and progressive strategy that engages (i) the academic expertise of its members, but also (ii) its culture of a systemic approach. We propose to train digital health professionals in close collaboration with the Caribbean Hub, and to support the development of structuring projects with use cases adapted to the region.

Conclusion: An integrated vision of the issues facing the region as a whole will be created, with the aim of building an eco-citizen digital commitment. The expertise and involvement of stakeholders in the generation of digital tools will be key to ensuring the resilience of systems and the ability to respond rapidly to changes caused by a crisis situation. It will generate a high level of activity in terms of research, international relations and scientific and cultural promotion of digital technologies.

Keywords: Caribbean Region, Big Data, Common Data Elements, Organizational Innovation

The Performance Of FIT-Based Colorectal Cancer Screening： Results From A Population-Based Program

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Background/ Purpose: Colorectal cancer is the fourth leading cause of cancer death worldwide. Colonoscopy is still a gold standard method for early diagnosis but using colonoscopy alone as a mass screening method is unrealistic. The objective was to estimate whether FIT(+) population for high-risk assessment is more efficient and economical than FIT(-) population. We also evaluated the performance of risk-risk-stratification models by FIT.

Methods / Approaches: This study was based on the Cancer Screening Program in Urban China. Residents aged 45-74 years with a positive high-risk factors questionnaire (HRFQ) or a positive FIT were identified as high-risk participants and were subsequently recommended for a free colonoscopy in 2020-2023. FIT(+) group and FIT(-) group were defined as FIT status.

Results: The participation rates were 32.62% and 17.11% in the FIT(+) and FIT(-) group. A total of 44 CRC, 1789 NAA and 601 AA cases were detected. The positive predictive values of were higher in FIT(+) group than those in the FIT(-) group. The detection cost for each CRC, AN and NAA were US$22196, US$1514 and US$545, respectively. Compared to FIT(-), the cost of the FIT(+) for detecting CRC cases was decreased by about 80%. After a median follow-up of 2.22 years, 292 individuals had a CRC diagnosis and the calculative incidence was higher in FIT(+) than that in FIT(-). The percentage of stage I CRC in the FIT(+) was 40%, which was higher than in FIT(-) group (15%). The performance of risk-stratification model combing with FIT were better than whatever FIT only or risk factors only.

Conclusion: Colonoscopy participation and screening yield were better for FIT(+) group than FIT(-) group. Except FIT, HRFQ was also a necessary first step screening for a mass CRC screening program. The association between FIT status and CRC burden should be evaluated after a long-term follow-up period.

Keywords: colorectal cancer; FIT; colonoscopy; propensity score matching; risk-stratification model

The Burden of Colorectal Cancer in Jordan: Trends in Survival from 2015 to 2019

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Background/ Purpose: Colorectal cancer (CRC) is a leading cause of cancer-related mortality worldwide. In Jordan, CRC ranks among the top cancers, particularly affecting older adults and males. Understanding survival patterns is crucial to guide national screening and treatment strategies.

Methods / Approaches: This retrospective cohort study analyzed data from the Jordan National Cancer Registry (2015–2019). A total of 3,541 Jordanian CRC cases with valid national IDs were included. Data on demographics (age, sex, marital status), tumor characteristics (location, morphology, grade), and survival status were collected. Kaplan-Meier analysis estimated five-year survival rates by subgroups. Analyses were conducted using SPSS version 21.

Results: Most patients were aged 60 years or older (52.4%) and male (56.1%). The most common tumor locations were the rectum (25.1%) and sigmoid colon (19.8%), with adenocarcinoma being the most frequent histological type (81%). The overall five-year survival rate was 49.1%. Younger patients aged 21–30 years had the highest survival at 59.5%, while those aged 60 years or older had the lowest at 44.3%. Females had a higher survival rate (52.2%) compared to males (46.7%). Survival varied by tumor location, with the highest survival seen in the sigmoid colon (58.3%) and the lowest in tumors of the hepatic flexure (40.2%). Stage at diagnosis significantly influenced survival: patients with localized disease had a survival rate of 70.9%, those with regional disease 60.4%, and those with distant metastasis only 17.8%.

Conclusion: CRC remains a major burden in Jordan. Early-stage diagnosis is associated with significantly better survival, highlighting the importance of national screening efforts. Improving access to timely diagnosis, complete pathology reporting, and specialized care is essential for better outcomes.

Keywords: colorectal cancer, survival, Jordanian

Enhancing Cancer Registry Accuracy Through Data Validation and Follow-Up in Resource-Limited Settings

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Background/ Purpose: Cancer registries are vital for cancer surveillance and research. Accurate, timely updates are essential to track outcomes, especially where documentation gaps challenge completeness. This study shows the importance of data validation process and a proper follow-up policies at Shefa Al-Orman Hospital Cancer Registry (SOH-CR) to improve tracking cancer incidence, Tumor characteristics ,and monitoring survival rates.

Methods / Approaches: A retrospective cohort study reviewed 20,374 cases (November 2022–November 2024). Validation was done monthly by cancer registrars, following ICD-O3 and SEER guidelines, Cases registered in a given month are reviewed in the first day of the following month. Besides the prior unvalidated cases are reviewed with detailed clinical information. A follow-up policy updated patient status and mortality. Patients were contacted if absent for six months after outpatient visits or one month after hospital admissions. A team verified survival status with patients or families. Shapiro normality and Wilcoxon Signed Ranks tests compared data before and after validation.

Results: Significant changes were observed in cancer type distribution after validation ($p = 0.024$). Breast cancer cases increased from 4,609(22.6%) to 4,907(24.1%), digestive system from 3,980(19.5%) to 4,605(22.6%). Lymphoma and respiratory system cases rose from 885 (4.3%) and 1,343(6.6%) to 1,269(6.2%) and 1,648(8.1%), respectively. Miscellaneous cases decreased from 801(3.9%) to 579(2.8%), and Other from 2,325(11.4%) to 185(0.9%). After applying the follow-up policy, 4,710 deaths were updated. Lost to follow-up and confirmed deaths decreased: 808 (338 deceased) in December 2022, 504 (202 deceased) in January 2023, and 427 (126 deceased) in February 2023. By December 2024–February 2025, numbers dropped to 346 (101deceased), 169 (30deceased), and 145 (28deceased).

Conclusion: The implementation of structured data validation and follow-up policies significantly improved SOH-CR data accuracy, enhancing cancer classification, mortality reporting, and survival tracking. This initiative offers a model for improving cancer registries in resource-limited settings.

Keywords: data validation, follow up policy, Cancer Registry, Survival analysis, Cancer surveillance

Optimising Registration Procedures For Urothelıal Tumours In The Urınary Tract: Implementing Encr 2022 Recommendations

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Background/ Purpose: Accurate registration of urothelial tumours is challenging due to their multifocal nature, recurrence and progression patterns, and diverse morphology. The 2022 European Network of Cancer Registries (ENCR) Recommendations provide updated guidelines for recording and reporting these tumours. However, rules concerning multiple primaries and tumour grading are not fully aligned with general cancer registration standards, which may lead to inconsistencies in routine practice. This study aims to develop a practical decision flowchart to support the reliable application of these recommendations by cancer registrars.

Methods / Approaches: We reviewed the ENCR 2022 guidelines focusing on inclusion criteria, topography and laterality coding, progression and recurrence rules, and handling of multiple primaries. A modular decision flowchart has been developed to simplify tumour registration and clarify discrepancies with standard registration rules. Particular attention was given to complex cases such as synchronous/metachronous tumours, grade and behaviour assignment, and coding of ambiguous or incomplete pathology results.

Results: Implementation of the flowchart enabled the consistent application of ENCR rules, improving the accuracy of tumour coding and reducing subjectivity in complex scenarios. It also helped clarify which tumours should be recorded versus reported, especially in situations where ENCR guidance diverges from general registration principles. Registrars reported increased confidence in coding cases based on limited or non-standard information. The tool will be piloted in the Greater Poland Cancer Registry for new cases with a date of diagnosis since 2024 onwards. Incidence data will be subjected to comparative analysis with previous years.

Conclusion: Adapting the ENCR recommendations into a flowchart enhances the quality and consistency of urothelial tumours registration. Cancer registries are encouraged to adopt structured workflows and decision aids, such as this flowchart, to align with European standards and improve data comparability. Future steps include digital integration of the procedure into registry software and more extensive training of registry staff.

Keywords: Urothelial tumours, ENCR recommendations, Data standarization, Decision Flowchart

Survival Outcomes Of Cervical Cancer Patients By Stage At Diagnosis: A Multicenter Hospital-Based Study In China

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Background/ Purpose: Cervical cancer is one of the major threats to women's health. Systematic evaluation of long-term survival rates and associated factors is crucial for clinical management. However, large-scale, multicenter data from China remains scarce. This study aims to explore the survival outcomes and key influencing factors of cervical cancer patients at different stages across multiple hospitals in China.

Methods / Approaches: This retrospective cohort study included female patients diagnosed with cervical cancer who received initial treatment between 2016 and 2018 at five cancer hospitals in China. Follow-up ended on October 31, 2024. Overall survival rates were calculated using the Kaplan-Meier method, stratified by FIGO stage and treatment modalities. We used Cox proportional hazards regression models to analyze prognostic factors.

Results: A total of 1,154 patients were included in the study. The overall 5-year survival rate was 79.6% (95% CI: 77.2–82.0), with a declining trend across FIGO stages: 89.3% (86.5–92.1) for stage I, 79.4% (75.5–83.6) for stage II, 65.6% (58.9–73.1) for stage III, and 24.7% (13.9–43.8) for stage IV (log-rank $P < 0.001$). Compared to stage I, multivariate analysis revealed progressively elevated mortality risks for advanced stages: stage II (HR = 1.63, 95% CI: 1.14–2.33), stage III (HR = 2.63, 1.69–4.10), and stage IV (HR = 6.83, 4.03–11.56). Smoking history was associated with poorer prognosis (HR = 1.71, 1.03–2.83), while surgery (HR = 0.01, 0–0.16) and radiotherapy (HR = 0.02, 0–0.2) served as protective factors. However, subgroup analysis indicated differential efficacy of these treatments between early- and late-stage patients.

Conclusion: This study reports the multicenter survival data of cervical cancer patients in China. FIGO stage, smoking history, and treatment modalities are critical determinants of survival outcomes, providing valuable evidence for optimizing the strategies of clinical management.

Keywords: Survival, Cervical cancer, FIGO stage, Influencing factors

Speeding Operations Of National Cancer Registry, Lebanon

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Background/ Purpose: The pandemic of COVID-19 has affected the National Cancer Registry leading to delay in the timeliness.Starting 2023, the Ministry of Public Health with the support from the World Health Organization, has worked to catch the gap and generate needed national figures for decision makers and professionals.The current abstract describes the coordination of various tasks related to the NCR.

Methods / Approaches: Initially, the NCR team included 2-3 staff in charge of data collection, coding and entering. In 2023, the team was re-organized involving more surveillance teams, with integrated disease approach. The team was split to cover various operations: 1) data collectors in charge of collecting the data from various sources, 2) medical codeurs in charge of coding using the ICD-O-3, and trained locally, 3) data entry staff in charge of entering the data into Canreg5, 4) data importers in charge to prepare received excel files for later importation into canreg5, 5) data cleaners including duplicate search, 6) data analyzers.Close monitoring of operations was conducted at least on monthly basis related to collection, coding, entering and cleaning.

Results: In 2022, the available data for NCR was up to year 2017. From 2023 to May 2025, data for the years 2018-2021 were completed. It is planned to finalize the 2022-2024 by the end of the 2025.

Conclusion: The training, coordination, and close monitoring of NCR operations have positive impact to speed the handling of data and generating the national figures, and improve the NCR timeliness.

Keywords: National Cancer Registry, Team work, Lebanon

Cancer Registration in the Eastern and Southeastern Region of Algeria and the Main Cancer Sites, 2014–2018

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Background/ Purpose: Cancer represents a global burden with significant variations in disease incidence. In Algeria, cancer has become a major public health concern. Since 2014, following the nationwide implementation of cancer registration and the establishment of a national cancer network, the coverage rate of this registration system has steadily increased.This study aims to assess the evolution of cancer registration coverage rates from validated registries within the East and South-East network and to estimate the incidence of major cancer sites in this region between 2014 and 2018.

Methods / Approaches: A cross-sectional, descriptive epidemiological study was conducted from January 1, 2014, to December 31, 2018. The first analysis focused on cancer registration coverage rates with international comparisons. The second analysis examined cancer incidence data estimated from validated registries within the East and South-East network.

Results: In 2014, the cancer registration coverage rate was below 60%. By December 31, 2017, this rate had reached 90% of the East and South-East Algerian population, equating to 15,528,870 inhabitants. In 2018, a slight decrease to 84% was observed. This coverage rate is among the highest in Africa.In 2018, the estimated number of new cancer cases in the East and South-East region for all sites and both sexes was 19,636, with a world-standardized incidence rate of 183.2 per 100,000 inhabitants, showing a higher prevalence among females.Among men, the most frequent cancers were lung, colorectal, prostate, and bladder cancers. In women, breast cancer was predominant, accounting for 45.1% of cases, followed by colorectal, thyroid, and cervical cancers.

Conclusion: Cancer registries serve as reliable data repositories, enabling the investigation of geographical disparities in major cancer sites. They facilitate etiological epidemiological studies, trend analyses, and survival studies.

Keywords: cancer, registration, registry, incidence, Algeria

Follow-Up Care For Cancer Survivors In China: Current Status, Challenges, And Strategies

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Background/ Purpose: The rapid rise in cancer survival rates across China has led to a dramatic increase in the number of survivors. While national cancer registry guidelines mandate that registries conduct follow-up visits for patients, the institutional capacity to execute these requirements and the potential barriers have yet to be systematically evaluated.

Methods / Approaches: We conducted a nationwide survey to assess the current situation regarding follow-up care for cancer patients among community medical institutions (CMI), who are the frontline providers responsible for delivering such care.

Results: 22033 CMIs participated in the survey, covering 47.6% street/township jurisdictions in China. 27.6% CMIs located in urban areas and 72.4% in rural areas. 91.6% of CMIs were tasked with conducting follow-up visits for cancer patients and 83.5% of them reported having implemented a working system. Telephone-based or platform-mediated remote consultations were the dominant modality (76.4%), followed by indirect validations through village doctors or community committees (59.0%) and home visits (42.6%). Patients' resistance to follow-up visits and a high rate of loss to follow-up were the paramount challenges. 75.8% of CMIs reported that cancer patients demonstrated significantly lower willingness to engage in follow-up visits compared to patients with other non-communicable chronic diseases, with this disparity being particularly pronounced in urban settings. 13.4% of CMIs noted that over 50% patients refused all kinds of follow-up contact. Fear of cancer (97.5%), discomfort with heightened medical oversight (75.5%), and perceived futility of these visits (72.1%) emerged as the primary barriers to follow-up adherence among patients.

Conclusion: Most CMIs have implemented cancer follow-up care. However, the visiting modalities employed remained traditional and patients' willingness to participate was weak. To enhance the quality of work, strategies including shaping patients' perceptions of cancer through public education, innovating follow-up methods, and emphasizing the practical value of follow-up content might prove effective.

Keywords: cancer registry, follow up, China

Global Trends and Sex Differences in the Incidence of Esophageal and Gastric Cancer by Subtype

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Background/ Purpose: With the renewal of Cancer Incidence in Five Continents (CI5) data, we aim to update and expand upon the temporal trends and sex differences in the incidence of esophageal and gastric cancer by subtype.

Methods / Approaches: We extracted incidence data on esophageal squamous cell carcinoma (ESCC) and adenocarcinoma (EAC) from 25 countries, and gastric non-cardia cancer (GNCC) and cardia cancers (GCC) from 24 countries in CI5 VIII-XII (1993-2017) for trend analysis. Age-standardized incidence rates (ASIRs), ESCC-to-EAC ASIR ratios, and GCC-to-GNCC ASIR ratios were estimated using the Segi's World Standard Population, and annual percentage changes were estimated using Joinpoint regression. Additionally, we selected 53 and 48 countries in CI5 Volume XII (2013–2017) to evaluate male-to-female ASIR ratios for esophageal and gastric cancer by subtype.

Results: From 1993 to 2017, ESCC ASIRs significantly declined in 19 countries, while EAC ASIRs increased in 13 of these countries. Conversely, both ESCC and EAC ASIRs increased in Denmark, Japan, Latvia, and the Czech Republic, and EAC ASIRs decreased only in Korea. ESCC-to-EAC ASIR ratios gradually narrowed in most countries, with EAC surpassing ESCC among males in 10 countries, and among females in the Philippines. Additionally, GNCC and GCC ASIRs generally showed declining trends worldwide, with significant increases in GCC ASIRs only observed in 8 countries. While GCC ASIRs consistently remained lower than GNCC ASIRs, the difference between the two subtypes significantly narrowed in 16 countries. However, in China, the GCC-to-GNCC ASIR ratio decreased from 0.15 to 0.06. Sex-specific analyses revealed that males exhibited higher ASIRs than females for esophageal and gastric cancer by subtype, with more pronounced sex differences observed for EAC and GCC from 2013 to 2017.

Conclusion: This study highlights the changing epidemiology of esophageal and gastric cancer by subtype, providing important scientific evidence for tailoring prevention and control strategies based on subtypes and sex-specific trends.

Keywords: Temporal trends, Sex differences, Esophageal cancer, Gastric cancer, Subtypes

Analysis Of Gastric Cancer Screening Cohort Results In Hebei Province.

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Background/ Purpose: To establish a gastric cancer screening cohort in Hebei Province and analyze demographic characteristics, compliance with endoscopic screening, detection rates, and follow-up results. This study aims to support the optimization of screening strategies and the development of risk prediction models.

Methods / Approaches: This research utilized data from the upper gastrointestinal cancer screening project in Hebei Province (2017-2019) and the urban early diagnosis and treatment project (2016-2022) to create a prospective cohort. The cohort included residents aged 40-74 years screened for high-risk individuals through questionnaires and risk assessments for endoscopy. We analyzed cohort characteristics, proportions of high-risk populations, participation rates in screenings, and positive detection rates. Active and passive follow-ups were conducted until June 2023. Based on these follow-up data, we assessed the cumulative incidence rate of gastric cancer as well as clinical features of patients.

Results: A total of 235,060 participants completed the questionnaire, revealing a high-risk rate of 24.1% and a screening participation rate of 29.0%. Among high-risk individuals aged 45-64 with higher education or a history of smoking or upper gastrointestinal diseases showed better compliance with gastric cancer screenings. We identified 559 positive cases, resulting in a detection rate of 3.40%, including 45 diagnosed gastric cancers for a detection rate of 0.27%. Follow-up indicated an overall cumulative incidence rate for gastric cancer at approximately 2.30‰; this figure rose to about 3.22‰ in high-risk groups and reached around 6.19‰ among those undergoing endoscopic screenings. Among confirmed gastric cancer patients, adenocarcinoma comprised approximately 73.7%, with cardia involvement at about 57.9% and poorly differentiated carcinoma accounting for roughly 60.3%.

Conclusion: Endoscopic screening effectively enhances gastric cancer detection rates; however, overall participation remains low, highlighting the need for increased public awareness campaigns focused on prevention targeted at key demographics vulnerable to this disease.

Keywords: Hebei Province, gastric cancer, screening, detection rate

The African Cancer Registry Network: Future Of Cancer Registration In Sub-Saharan Africa

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[1]African Cancer Registry Network

Background/ Purpose: Population-based cancer registries (PBCRs) provide data on cancer incidence, stage and survival to support the development of a National Cancer Control Plans (NCCP) and provide material for research into cancer cause and prevention. Despite all the technical and financial challenges, there has been substantial changes in the landscape of cancer registration in numbers of sub-Saharan countries as well as the quality of their data since the inception of the African Cancer Registry Network.

Methods / Approaches: In 2012, the African Cancer Registry Network (AFCRN) was founded to bring together all of the existing PBCRs meeting modest standards of quality (completeness and validity) in a mutually-reinforcing partnership. The AFCRN is partnered with the International Agency for Research on Cancer (IARC) as the Global Initiative for Cancer Registry Development (GICR) Regional Hub for SSA. The role of the Hub is to coordinate activities for training; consultancy visits for onsite assessment and technical support; multi-national research studies on trends, staging, treatment and survival, and to advocate the cause of cancer registration.

Results: In 2025, AFCRN has a membership of 37 functioning PBCRs in 25 SSA countries, together with four GICR Centre of Expertise. In collaboration, AFCRN member registries participated in multiple international research activities on survival, trends in incidence of major cancers, and access to and availability of standard therapies. In combination of the use of modem IT support and traditional data collection, several countries finding their way forward with their national cancer registration programme, after strengthening their PBCRs.

Conclusion: Population-based cancer registration always feasible even in low-income settings. Cancer registries face all sorts of challenges, but with tailored support, AFCRN member registries continue to improve their abilities and scope of work, and the development of new registries are encouraged and supported.

Keywords: sub-Saharan Africa, Training, Consultancy, Research, GICR SSA Hub

Breast Cancer In Lebanon, Continuous Increasing Trends

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[1]Ministry of Public Health

Background/ Purpose: The national cancer registry started in Lebanon since 2003. It relies on high coordination between the public and the private sector. The objectives are to maintain the national capacity to maintain and update the NCR database despite crisis and to monitor disease occurrence and characteristics over time, place, person and disease.The current abstract describes the evolution of breast cancer in Lebanon over the past years.

Methods / Approaches: The NCR targets invasive tumours. Data is collected from hospitals and laboratories on annual basis. Medical coding is then conducted based on ICD-O-3, and when possible, T, N, M and stage are recorded. Data is handled into the Canreg5 via data entry or via importation of excel file, after preparation using R. Final tables are generated as standard tables by time, person, and disease characteristics and posted on the MOPH website.

Results: From 2005 to 2021, the number of new cases raised from 1451 to 3072. Over the years, it represents 39% of cancer among female patients. The incidence crude rate per 100000 increased from 71.9 to 106.9, with relative decrease in 2009 and 2017. As for the age-standardized rate increased from 71 to 93.3 in 2021. The curve had a peak to 115.6 in 2013. The age-specific incidence rates showed peaks at 45-54y and 70+y. The main factors contributing to the observed variations are the change in methods on estimating the denominators and the population movement such as influx from Syria, and immigration of Lebanese citizens.

Conclusion: Breast cancer remains a high burden for Lebanon. There is need to initiate systematic analysis of survival via mortality database and the survival surveys.

Keywords: national cancer registry, breast cancer, Lebanon

Hospital Based Cancer Registry: Two Decades of Data From The National Cancer Institute Misurata, Libya (2004–2024)

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Background/ Purpose: Cancer services in Libya are organized into five geographic areas, each centered around a regional cancer care facility. The National Cancer Institute Misurata (NCI), serving the middle region of Libya, it was established in 2004. This study describes the epidemiological profile of cancer cases recorded at NCI Misurata over a 20-year period. This retrospective study to analyze demographic distribution, and major cancer types among patients registered at NCI Misurata between 2004 and 2024.

Methods / Approaches: A retrospective, descriptive study was conducted using cancer database from the NCI cancer registry archives. All newly registered cases from January 2004 to December 2024 were included. descriptive statistics used to analyses the data, excel spread sheet used to enter & analyses this data in frequencies, percentages, mean, and standard deviation . Ethical approvals was obtained from the institutional authorities

Results: In twenty years, a total of 16,240 cancer cases were registered. Females accounted for 53.4% of cases. Breast cancer was the most common malignancy (21.7%). The patient age ranged from 1 month to 108 years (mean = 55 years, SD ±18.3). Although NCI Misurata primarily serves central Libya, it received cases from across the country, with Misurata city contributing approximately one-third of cases. Childhood cancers, formally recorded since 2017, it represented 4% of total cases. Leukemia was the most frequent childhood cancer, predominantly acute lymphoblastic leukemia.

Conclusion: Cancer database in national cancer institute for 20 years included just above 16000 cases, breast and colorectal cancers account for almost 40% of these cases. Up to two third of the registered cases were from across the country, and this indicate that the specialized cancer care center in this country are open for any resident in the country. These findings highlight the critical relevance of hospital-based registries in determining national cancer patterns and planning services.

Keywords

: Hospital-Based Cancer Registry; National Cancer Institute Misurata; Libya; Epidemiology; Cancer Care Services

Regional Population Based Cancer Registry: First Report From Midland Cancer Registry, Libya (2020)

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Background/ Purpose: The Midland Cancer Registry (MCR), launched in 2021 at the National Cancer Institute Misurata, is the first population-based cancer registry in middle part of Libya. This initial report presented 2020 data covering these geographical areas (Misurata, Al Jufra, and Sirt), and it represented 13% of Libya's population. This study to document and analyze the incidence and distribution of cancer cases in Libya's Midland region for the year 2020.

Methods / Approaches: International standards for Population bases roles were followed to establish the registration at national and regional levels. Data were collected using a nationally approved abstraction form from hospitals, laboratories, and oncology centers. Cancer cases were coded according to International Classification of Diease-Oncology-3rd edition standards and analyzed using CanReg5 software. Population estimates based on national census data (last Libyan census was in 2006). Official approvals taken from Libyan Authorities to participate in this conference.

Results: In 2020, MCR registered 690 new cancer cases, accounting for 10.33% of Libya's total cancer incidence. Females represented 52% of cases. The most prevalent cancers were breast (25%), and colorectal (22%). Misurata contributed 8.11% of the national cases. Crude Incidence Rate is 77.05 per 100,000 (Males= 73.59; females= 80.59). Age Standardized Rate adjusted to the world standard population was 127.9 per 100,000 population (Males= 121.46; females= 133.66).

Conclusion: This report provides the first comprehensive cancer incidence data for Libya's Midland region, highlighting the predominance of breast and colorectal cancers and highlighted the crucial need for targeted cancer control strategies in these areas.

Keywords

: Libya; Cancer Registry; Cancer Incidence; Population-Based; Regional Cancer Registry

Updates To Russıa’s Cancer Registry Standards: 2025 Regulatory Reforms

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Background/ Purpose: For 25 years, Russia's cancer registry operations were governed by Ministry of Health Order №135 (1999), with limited updates until 2015 when guidelines for multiple primary tumors were introduced. Recognizing the need for alignment with international standards, three leading Russian oncological institutes developed updated Cancer Registration Guidelines in 2025. These comprehensive reforms modernize key aspects of cancer registration while expanding surveillance capabilities.

Methods / Approaches: The 2025 guidelines were developed through a consensus-based approach involving Russia's three leading oncological institutes, incorporating IARC/IACR international standards while adapting them to national healthcare infrastructure. Key methodological innovations include: (1) expanding incidence date determination to incorporate modern diagnostic pathways (first positive genomic/molecular test, diagnostic tumor markers, definitive imaging, or MDT confirmation); (2) revising multiple primary tumor classification to include in situ neoplasms (D00-D09); (3) mandating reporting of myeloproliferative diseases (D45-D47).

Results: The reforms establish full compatibility with international standards (ICD-O-3, IARC/ENCR guidelines). The refined incidence date criteria capture modern diagnostic pathways, while in situ tumor registration enables better early-stage cancer monitoring. Inclusion of D45-D47 neoplasms creates comprehensive hematological malignancy surveillance. Standardized diagnostic timelines improve data quality for research and policy-making.

Conclusion: Russia's 2025 cancer registry standards represent significant progress in data harmonization and completeness. Subsequent guideline updates will focus on integrating insurance claims databases and national mortality data to further enhance registry comprehensiveness and accuracy. These improvements will strengthen Russia's cancer surveillance system and its utility for both national policy and international research collaborations.

Keywords: cancer registry reform, multiple primary tumor, incidence date

Notification Of Locoregional Breast Cancer Recurrence Based On Pathology Reports: Validation Study Using A National Cancer Registry

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Background/ Purpose: Usually, data on locoregional recurrent breast cancer (LRR) are collected by reviewing all patient files of a specific cohort, despite only few patients actually have a LRR. We describe and validate a new procedure in which notifications of LRRs are obtained via pathology reports, which could improve efficiency.

Methods / Approaches: Patients diagnosed with nonmetastatic invasive breast cancer between 2012 and 2016 were identified from a national cancer registry (NCR) and linked to the national pathology databank. LRRs were identified using a complex algorithm based on codes and text in pathology reports, whereafter only files from patients with a notification – i.e. patients who were suspected of having had a LRR – were consulted for confirmation and additional information. To validate this procedure, patients diagnosed between January-March 2012 – of whom data on LRRs were previously collected manually by registrars from the NCR – were used as the gold standard. Subsequently, patients with LRRs not notified by the new method were identified and original pathology reports and clinical reports were evaluated to find reasons for the lack of notification.

Results: In total, 88,257 patients were linked to the pathology databank, 5069 patients were labelled with a notification. In patients diagnosed between January-March 2012 (validation cohort, n = 3092), 270 patients were labelled with a notification. Of these patients, 82 (2.7%) were diagnosed with a LRR. The notification method identified 63 patients (77%) with LRRs. Missed notifications were due to clinical diagnoses (not available in pathology databank, 53%) or incomplete/incorrect pathological reporting (47%). The notification method resulted in cost savings of €2.949.127,- as compared to the manual scenario.

Conclusion: Using the notification method, almost 80% of the patients with LRRs were identified, with huge reductionsin registration burden and costs. The incompleteness should be considered in future analyses. Improvementin pathology reporting could increase completeness.

Keywords: breast cancer recurrence, pathology databank, Netherlands Cancer Registry, registration burden, algorithm

Evaluation of Access to Cancer Care and Net Survival: A Cohort Study Using Osaka Cancer Registry, Japan

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Background/ Purpose: Designated cancer care hospitals are allocated in each secondary medical area (SMA) to ensure equal access to cancer care in Japan. Balancing access equality and efficiency in cancer care is crucial. We examined the degree of equalization in hospital access and the efficiency in surgical care for patients with colorectal cancer (CRC) across eight SMAs in Osaka Prefecture. Access was measured by travel time, and efficiency was measured by net survival for those who underwent surgical resection. Travel time was calculated primarily using public transport, rather than straight-line distance.

Methods / Approaches: Patients aged 15–99 years diagnosed with CRC between 2013 and 2016 were extracted from the Osaka Cancer Registry, which covers all residents of the prefecture. Travel time from patients' addresses to the hospitals where they received cancer care was estimated using the Ekispert application programming interface and compared across the eight SMAs. For patients whose primary treatment was surgical resection, 3-year net survival was calculated for each SMA and visualized using funnel plots.

Results: A total of 33,973 patients residing in Osaka Prefecture were diagnosed or received primary treatment at medical institutions within the prefecture. Of these, 27,637 (17,982 with colon and 9,655 with rectal cancer) underwent surgical resection. The median travel time for patients was 27 (interquartile range 14-62) minutes. Although travel time varied by up to 20 minutes across SMAs, 90% of patients were estimated to have reached a medical institution within 82 minutes. The 3-year net survival for those who underwent surgical resection was 82.4% (95% confidence interval [CI]: 81.7–83.1%) for colon and 83.2% (95% CI 82.3–84.1%) for rectal cancer, with no outliers identified in the funnel plots.

Conclusion: The efficiency of surgical care for CRC in Osaka Prefecture was generally uniform across SMAs, and access to hospitals fell within an acceptable range.

Keywords: access to cancer care, survival, designated cancer care hospital, cancer registry

Improvement In Survival Of Adolescents And Young Adults Diagnosed With Cancer In Poland Between 2000 And 2019

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Background/ Purpose: In Poland, over 8,500 individuals aged 15 to 39 are diagnosed with cancer annually, representing approximately 5% of all new cancer cases. Cancers are responsible for over 10% of deaths among adolescents and young adults (AYA). An improvement in 5-year relative survival rates has been observed for AYA cancer cases diagnosed between 2000 and 2019 in Poland, particularly for the most common cancers in this age group.

Methods / Approaches: The analysis used data from the Polish National Cancer Registry. Five-year survival rates were estimated for patients aged 15–39 who were diagnosed between 2000 and 2019 and followed up until December 2023. Net survival was calculated using the Pohar-Perme method. Survival trends were compared across four diagnostic periods: 2000–2004, 2005–2009, 2010–2014, and 2015–2019, within the age groups: 15–19, 20–29, 30–39, and the combined 15–39 age group.

Results: The most common cancers among AYA were hematologic and lymphoid malignancies, central nervous system (CNS) tumors, bone and soft tissue sarcomas, breast cancer and gynecologic cancers in women, testicular cancer, melanoma, colorectal cancer, and thyroid cancer. The greatest improvement in 5-year survival rates among AYA patients (between the first and last diagnostic periods) was observed for all leukemias (an increase of 21 percentage points – from 50% to 71%), non-Hodgkin lymphoma (18 percentage points – from 65% to 84%), bone sarcomas (10 percentage points – from 61% to 71%), and CNS tumors (10 percentage points – from 61% to 71%). The smallest improvement was seen in testicular cancer (5 percentage points – from 89% to 94%).

Conclusion: The increase in survival rates is attributed to advances in diagnostics (e.g., molecular diagnostics, earlier detection), modern treatment methods (targeted therapies, pediatric-based treatment protocols), and improvements in care organization (multidisciplinary treatment, access to clinical trials).

Keywords: cancer, survival, AYA

Impact of Demographic Transition on Colorectal Cancer Incidence: An Analysis of İzmir Cancer Registry Data, 1998–2017

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Background/ Purpose: This study applies Das Gupta's decomposition method to partition the change in colorectal cancer cases between 1998 and 2017 in İzmir into components of population growth, population ageing, and other factors.

Methods / Approaches: We used age-specific colorectal cancer case counts and person-year data obtained from the IARC-CI5 Plus database for the Izmir Cancer Registry for 1998–2017. Applying Das Gupta's decomposition method, we partitioned the absolute change in total cases into components due to population growth, population ageing, and other factors across four consecutive five-year intervals (1998–2002, 2003–2007, 2008–2012, 2013–2017).

Results: Between 1998 and 2017 in Izmir, colorectal cancer cases rose from 190 to 776 in males and from 116 to 515 in females. In males, the demographic contributions grew over time: non-demographic factors dominated in 1998–2007, aging drove 53.04% of the increase in 2008–2012 and 70.90% in 2013–2017. In females, growth's share climbed steadily, while aging's share dipped from 49.8% to 48.2% in 2008–2012 before surging to 82.00% in 2013–2017. In every comparison after 2003, population aging was identified as the primary driver of the increase in cases. Moreover, for both sexes across all inter-period comparisons, the proportion attributable to population aging consistently exceeded that of population growth.

Conclusion: The increase in colorectal cancer incidence in Izmir is driven predominantly by population ageing rather than growth. Our findings imply that, as population growth slows, ageing will become the dominant driver of future colorectal cancer incidence—and that population-pyramid analyses should inform employment and screening policies. Employment policies should be revised to incorporate age-structured projections—prioritizing deployment of specialists in regions with higher elderly populations—to ensure adequate cancer care capacity as Türkiye's demographic transition continues.

Keywords: Colorectal Cancer, Demographic Transition, Das Gupta Decomposition, İzmir Cancer Registry

Breast Cancer Trends And Geographic Inequities In A Brazilian State: Evidence From 1996–2022

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Background/ Purpose: Breast cancer continues to be the leading cause of cancer-related incidence and mortality among women globally. While most pronounced in high Human Development Index (HDI) countries, the burden is rising rapidly in low- and middle-income settings. This study assessed long-term temporal trends and spatial patterns of breast cancer incidence and mortality in Sergipe, Brazil, aiming to reveal age-specific changes and regional disparities in cancer control.

Methods / Approaches: This population-based study analyzed incidence data (1996–2017) from the Aracaju Cancer Registry and mortality data (1996–2022) from the Mortality Information System. Age-standardized (World Population) and age-specific rates were computed and time trends were evaluated using Joinpoint regression to estimate Annual Percent Change (APC) and Average APC (AAPC). Spatial analysis applied Bayesian smoothing and Moran's Index to detect clusters and assess geographic inequalities. The mortality-to-incidence ratio (MIR) was calculated to ensure healthcare effectiveness.

Results: From 1996 to 2017, the age-standardized incidence rate (ASR) increased from 28.8 to 37.8 per 100,000 women. Mortality ASR also rose, from 7.1 (1996–2005) to 13.0 per 100,000 (2018–2022). Incidence trends showed significant increases among women aged 15–39 (APC = 2.5%; $p < 0.001$) and 50–69 (APC = 2.1%; $p < 0.001$), while stabilizing among women aged 70+. Mortality grew most rapidly among women aged ≥70 until 2010 (APC = 8.4%; $p < 0.001$), then plateaued. The MIR rose from 0.25 (1996–2005) to 0.34 (2013–2017), suggesting limited improvement in survival. Spatial analysis revealed significant regional disparities, with high-risk clusters indicating inequities in early detection and treatment availability.

Conclusion: Breast cancer incidence and mortality rates have increased substantially in Sergipe, especially among younger and peri-menopausal women. The rising MIR and pronounced spatial heterogeneity call for urgent, equity-focused public health strategies, including improved access to screening, early diagnosis, and timely treatment in underserved areas.

Keywords: Breast cancer, Incidence, Mortality, Time trends, Spatial analysis

Patterns Of Liver Cancer (Lc) Incidence In Ibadan Cancer Registry: 15 Years Of Cancer Registration, 2010-2024

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Background/ Purpose: Liver cancer is the 3rd most common cancer in Nigeria males and 6th in females. The well-established significant risk factor is infection by the hepatitis B virus. Hepatitis C and Aflatoxin also play some role in a few cases. Our study aimed to describe the patterns (possibly trend) of cancer incidence for 15 years of liver cancer in the Ibadan database.

Methods / Approaches: We reviewed and analyzed Data from the Cancer registry and extracted information to include age, sex and morphological diagnoses.

Results: We recorded 5,034 cancers from 2010 to 2024. Seven-hundred and fifty-one (14.9%) were Liver cancers. 484 (64.4%) were males, while 267 (35.6%) were females giving a male female ratio of 1.8:1. Liver cancer incidence increased sharply after age 24 and peaked in the 40–44-year age group, dropping off slowly, thereafter. Ninety percent of cases were hepatocellular, 1.2% hepatoblastoma, while others were unclassified (mostly clinical). The annual incidence of Hepatocellular carcinoma noticeably began to drop from 2019. Compared to previous reports from this environment, the sex ratio seems to even narrow down (from 2.4:1 to 1.8:1), whilst the age prevalence remains quite unchanged.

Conclusion: Vaccination against hepatitis B was introduced into the Nigerian National programme of immunization in 2004. The effect appears to have started showing after 15 years. Given the global variability in coverage of about 42% for HBV vaccination, it would appear that the gains from HBV vaccination in Nigeria are fair. The country should be encouraged to sustain efforts to improve and remain committed to the programme. Data from PBCRs appear certainly useful in monitoring the magnitude, burden and trends of cancer and will definitely assist all strategies of cancer control policies. For Liver Cancer, this information will be useful for primary prevention.

Keywords: Liver Cancer; Prevalence; HBV vaccination

Is Cancer Increasing In Young Adults In Spain? Incidence Trends For The Period 1993-2018.

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Background/ Purpose: Recent data suggest that the incidence of several types of cancer is increasing in adults under 50 years of age. We analysed the trends in cancer incidence in young adults in Spain for the period 1993-2018.

Methods / Approaches: We analysed all new incident cases in adults between 20-49 years old diagnosed in the period 1993-2018, using data from the 15 population-based cancer registries of the Spanish Network of Cancer Registries. For each combination of sex and anatomical site, we calculated truncated age-standardised rates per 100,000 persons using the European new standard population (TASR-E), and used joinpoint regression to analyse TASR-E trends and compute Annual Percent Change (APC).

Results: 153,599 new cases (58% in women) were diagnosed in young adults between 1993 and 2018. The most common sites were breast (N = 37,820 cases) and thyroid (N = 7,022) in women, and lung (N = 7,425) and testicular cancer (N = 5,306) in men. For all cancers (except non-melanoma skin cancer), TASR-E decreased in young men from 120.9 in 1993 to 94.3 in 2018 (APC = -1.4%; 95% CI: -1.5%; -1.2%), and increased in young women from 134.3 in 1993 to 166.9 in 2018 (APC = +0.7%; 95% CI: +0.5%; +0.9%). Breast cancer increased in young women, with an APC of +1.0%, whereas colon and rectum cancers remained stable in women (APC = 0.0% and +0.1%, respectively) and decreased slightly in men (APC = -0.7% and -0.4%, respectively).

Conclusion: Overall cancer incidence in Spain increased slightly in young women, and decreased in young men, with pronounced differences by anatomical site. Data until 2018 do not reflect the worrying increasing trends in breast and colorectal cancer observed in other developed countries. Understanding these patterns is crucial for developing targeted prevention and early detection strategies to address the existing cancer burden in younger populations.

Keywords: cancer incidence trends, cancer in young adults

Liver Cancer In China: Histological Distribution And Progress In Prevention And Control

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Background/ Purpose: In China, liver cancer imposes a substantial burden on public health. Elucidating epidemiological characteristics and major risk factors attribution of major histological subtypes of hepatocellular carcinoma (HCC) and intrahepatic cholangiocarcinoma (iCCA) is key to formulating precise prevention and control strategies.

Methods / Approaches: Data from 157 cancer registries in China in Volume XII of Cancer Incidence in Five Continents (CI5) were abstracted to estimate the proportion of liver cancer histological subtypes. Based on proportions and data from 700 cancer registrations, the distribution of different subtypes of liver cancer in China in 2022 was estimated. Population attributable fractions (PAFs) for hepatitis B virus (HBV), hepatitis C virus (HCV), Clonorchis sinensis, smoking, drinking, and body mass index (BMI) were calculated for different subtypes. The prevented number of liver cancer cases was estimated by adding the difference between the number of cases per year and the expected number assuming that the incidence rate remains in 2005.

Results: In 2022, the total number of liver cancer cases was estimated at 367,657, of which 78.5% were HCC and 17.4% were iCCA. By sex, HCC comprised 81.7% of male liver cancer cases, with an age-standardized incidence rate (ASIR) of 18.7/100,000, compared to 14.2% for iCCA (ASIR: 3.1/100,000). In females, HCC represented 69.9% of cases (ASIR: 5.2/100,000), and iCCA accounted for 25.9% (ASIR: 1.9/100,000). The PAF for all liver cancer cases was 70.0%. For HCC, PAF was 78.2%, with HBV, smoking, and BMI as leading risk factors. For iCCA, PAF was 36.4%, primarily attributed to BMI, Clonorchis sinensis, and smoking. From 2005 to 2022, a total of 1.3 million liver cancer cases were prevented, of which 1,001,966 were men and 301,129 were women.

Conclusion: China has achieved significant progress in liver cancer prevention and control. However, liver cancer remains an important threat, and customizing precise prevention and control strategies is essential.

Keywords: liver cancer, incidence, China, histological subtypes, prevention

Epidemiology Of Malignant Tumors In Uzbekistan

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Background/ Purpose: The burden of cancer continues to grow worldwide, with enormous physical, emotional and financial consequences for individuals, families, communities and health systems.

Methods / Approaches: We collected cancer incidence and mortality data from official statistical reports in Uzbekistan for the years 2013–2022.

Results: The results of the study showed, that the cancer incidence of Uzbek population (including basal cell skin cancer) increased over 2013-2022 by 31.8%. Thus, the number of newly diagnosed patients with malignant tumors over the last 10 years has increased from 20,003 to 26,367 cases and incidence rate per 100,000 population has increased from 66,9 to 73,2. The most commonly diagnosed cancer for both sexes in the country is breast (17,2%), followed by stomach (7,9%) and cervical (7,1%) cancer. Meanwhile, for men the most frequently occurring cancers are stomach (11,8%), lung (10,7%) and colorectal cancer (9,9%), and for women: breast (28,1%), cervical (11,9%) and ovarian (6,6%) cancer. In turn, the number of death cases from cancer over 2013-2022 raised from 11,249 to 13, 888 (by 23.4%). Mortality rate per 100,000 population over 2013-2022 has increased from 37,2 to 38,6. Breast (12,9%), stomach (10,1%) and lung (8,2%) cancers remained the leading cause of cancer death for both sexes in Uzbekistan. In men stomach (13,8%), lung (12,7%) and colorectal (8,7%) cancer are the main cause of death and in women: breast (23,4%), cervical (12,7%) and stomach (7,1%). In 2022, 49.1% of cancer cases were detected in the early stages (I-II st) (2013 y -31,9%), and almost 44% of cancer cases (2013 y-64,8%) were diagnosed in advanced stages of the disease.

Conclusion: Cancer incidence and mortality continues to increase in Uzbekistan.Over the past decade, the state of the oncological service has improved significantly due to the improvement the quality of healthcare, medical equipment and implementation of guidelines for the diagnosis and treatment.

Keywords: Cancer burden, incidence, mortality

Margin Status After Breast-Conserving Surgery For Breast Cancer In The Netherlands From 2009-2022: Room For Improvement

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Background/ Purpose: In breast-conserving surgery (BCS) tumor-positive margins increase the risk of local recurrence and require additional therapy. This study describes surgical margin status after BCS in the Netherlands between 2009-2022, focusing on trends and identifying subgroups at higher risk for tumor-positive margins.

Methods / Approaches: All patients undergoing BCS for non-metastatic breast cancer in the Netherlands from 2009-2022 were selected from the Netherlands Cancer Registry including data regarding patient tumor, and treatment characteristics, and surgical margin status. Descriptive statistics were used to analyze trends. Uni- and multivariable analysis were performed to identify patient subgroups at higher margin involvement risk.

Results: In total 109,475 women were included. The mean tumor-positive margin rate was 10.8%. An extensively positive margin (> 4mm involvement) occurred in 3.9% . A decreasing trend was seen until 2013. Tumor-positive margin risk were higher in patients with invasive lobular carcinoma (23%), multifocal disease (20%), pT2 (20%), pT3 (70%) stage and patients treated with neoadjuvant systemic chemo (20%), hormonal (24%) and targeted (12%) therapy . Odds ratio (OR) for tumor-positive margins ranged between 1.7 and 19. In preoperatively understaged tumors (cT

< pT) the rate of tumor-positive margins increased to 25%. Patients with pT3 tumors had the most extensively positive margins (49%) and the highest relative risk (RR 46; 95% CI 36-60).

Conclusion: Since 2013 a stable tumor-positive margin rate of 10.8% exist in the Netherlands. Of the total included patients 43% had at least one of the high-risk characteristics for tumor-positive margins. Room for improvement for specific patient subgroups persists.

Keywords: breast cancer, margin status, trends

Cancer Incidence Trends In The Unıted Arab Emirates(2014–2023):Insights From The Uae National Cancer Registry

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Background/ Purpose: Monitoring cancer incidence is essential for guiding public health policy and planning cancer control strategies. This study presents age-standardized incidence rates (ASIRs) for the most common cancers in the United Arab Emirates (UAE) from 2014 to 2023 using data from the UAE National Cancer Registry.

Methods / Approaches: Data on newly diagnosed cancer cases between 2014 and 2023 were extracted from the UAE National Cancer Registry. ASIRs per 100,000 population were calculated using the World Standard Population. The analysis focused on overall cancer incidence and four major cancers: breast, colorectal, thyroid, and prostate, with stratification by gender.

Results: Over the 10-year period, the ASIR for all cancers rose from 71.7 in 2014 to 105.4 per 100,000 in 2023. Among males, ASIR increased from 64.3 to 90.1, while among females it rose from 104.1 to 139.1, reflecting a consistently higher burden among females.I.Breast cancer (females): increased from 37.4 to 49.4.II.Colorectal cancer: modest rise from 9.4 to 10.3 across both genders (males: 10.1 to 10.7; females: 9.7 to 10.1).III.Thyroid cancer: increased significantly, especially in females (females: 8.1 to 13.2; males: 1.4 to 3.2).IV.Prostate cancer (males): rose from 10.6 to 15.2 per 100,000.

Conclusion: Cancer incidence in the UAE has steadily increased, especially among females and in thyroid and breast cancers. These findings emphasize the need for ongoing surveillance, targeted screening, and gender-specific public health strategies to mitigate the growing cancer burden.

Keywords: Cancer, ASIR, Incidence, UAE - NCR

Epidemiological Characteristics of Pancreatic Cancer in the Eastern and Southeastern Region of Algeria (2014–2018)

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Background/ Purpose: Pancreatic cancer is among the most lethal malignancies globally. In 2018, there were 458,918 new cases worldwide, accounting for 2.5% of all cancers. In Algeria, pancreatic cancer has a low incidence rate (3 to 4 per 100,000 inhabitants), is more prevalent in men, and two-thirds of cases are diagnosed after the age of 65. This study aims to provide incidence data on pancreatic cancer, examine its geographic distribution, and assess its evolution in the Eastern and Southeastern regions of Algeria.

Methods / Approaches: A multicentric, descriptive epidemiological study was conducted from January 1, 2014, to December 31, 2018, including all diagnosed cases of pancreatic cancer in the specified regions. Regional incidence rates were estimated using validated cancer registries.

Results: In 2018, an estimated 468 new cases of pancreatic cancer were reported in the region. Among digestive cancers, pancreatic cancer accounted for 9.8% in men and 3.3% in women. Crude incidence rates increased in both sexes: from 2.1 in 2014 to 3.1 in 2018 among men, and from 1.2 to 2.3 among women over the same period. Pancreatic cancer ranked eighth among men, representing 3.3% of all male cancers, and accounted for only 1.8% of cancers in women. Age-specific incidence rates showed a marked increase starting at age 50 for both sexes. The highest standardized incidence rates were recorded in Souk-Ahras, with 6.7 per 100,000 in men and 3.6 in women between 2014 and 2018.

Conclusion: Data from individual cancer registries and geographic mapping reveal significant variability, underscoring the need for epidemiological studies focusing on risk factors. Although the incidence of pancreatic cancer in this region remains low compared to developed countries—where it is a major public health concern and ranks as the seventh leading cause of cancer-related deaths—proactive measures are necessary to curb its progression given the severity of its prognosis.

Keywords: cancer, epidemiology, pancreas, incidence, Algeria.

The Global Trends in the Burden of Early-Onset Lung Cancer Attributable to Particulate Matter Pollution in 204 Countries and Territories: A Systematic Analysis from the Global Burden of Disease Study 1990–2021

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Background/ Purpose: There is substantial evidence indicating that particulate matter pollution (PMP) constitutes one of the primary risk factors for lung cancer. However, comprehensive research on the global burden of early-onset lung cancer (EOLC) induced by PMP is still scarce. Addressing this issue is of crucial importance for identifying risk factors among younger populations and developing targeted prevention strategies.

Methods / Approaches: We utilized data from the Global Burden of Disease Study (GBD) 2021 to retrieve mortality and disability-adjusted life years (DALY) rates for EOLC in the 25-49 age group across 204 countries and regions from 1990 to 2021.We calculated the annual percentage change (EAPC) in DALY rates and age-standardized mortality for EOLC and analyzed the temporal trends across gender, age groups, and the Socio-Demographic Index (SDI).Spearman's rank correlation analysis was also conducted to evaluate the relationship between age-standardized rates and the SDI.

Results: In 2021, the burden of EOLC attributable to PMP included 21,974 deaths (95% UI: 14,231 to 30,219) and 1,040,112 DALYs,(95% UI: 673,607 to 1,431,206). During the period from 1990 to 2021, the age-standardized death rate (ASDR) of EOLC resulting from PMP decreased (EAPC = -2.43%, 95% CI: -2.64 to -2.23), with household air pollution (HAP) presenting a more considerable reduction (EAPC = -5.1%, 95% CI: -5.58 to-4.62) compared to ambient particulate matter pollution (APMP) (EAPC = -0.3%, 95% CI:-0.13 to -0.47).From 1990 to 2021, the burden of PMP in high-middle and middle SDI regions surpassed the global average. Males consistently demonstrated a higher burdens compared to females across all age groups.

Conclusion: Despite a decrease in the EOLC burden attributed to PMP, the proportion of APMP has increased significantly, highlighting the need for targeted interventions addressing APMP, particularly in high-middle and middle SDI regions. Moreover, given the unique attributes of younger populations, enhancing early screening protocols is imperative.

Keywords: Particulate matter pollution; Early-onset lung cancer ; Epidemiology; Global Burden of Disease 2021; Prevention

Transforming Cancer Surveillance: Leveraging Data and Technology for Global Cancer Control

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Background/ Purpose: Cancer registries are the foundation of effective cancer control policies, yet many face challenges such as inconsistent data reporting, delays in data entry, and limited infrastructure. These issues are especially prevalent in low- and middle-income countries, where inadequate resources hinder accurate and timely cancer data collection. Without reliable data, timely interventions and informed cancer control policies are difficult to implement. This presentation focuses on how technology and global collaborations can address these challenges by improving the completeness, accuracy, and accessibility of cancer data, thereby enhancing cancer control efforts worldwide.

Methods / Approaches: This study evaluates how various technologies are being used to modernize cancer registries. Mobile data collection tools, such as smartphones and tablets, have enabled real-time, on-the-ground reporting, especially in remote areas. The integration of EHRs ensures that cancer data is standardized and easily accessible across healthcare systems. Cloud-based platforms provide scalable and secure storage solutions, facilitating seamless data sharing across regions and countries. AI and ML tools play a crucial role in automating data analysis, improving data validation, and enhancing the predictive capabilities of cancer registries. Additionally, international data-sharing platforms allow countries to collaborate, share data, and harmonize reporting standards. The research draws on case studies from regions like Africa, Southeast Asia, and Latin America, showcasing innovative strategies used to overcome local barriers in cancer surveillance.

Results: Technologies such as mobile tools and cloud systems have reduced data reporting delays and improved accuracy. AI-driven tools have helped identify unreported cancer cases, leading to more comprehensive data. Global data-sharing platforms have fostered international collaboration, allowing for tailored cancer control interventions in low-resource settings.

Conclusion: Technological advancements are revolutionizing cancer surveillance systems, enabling more accurate and timely data collection. By leveraging these technologies and fostering global collaboration, cancer registries can support better cancer control policies and ultimately save lives.

Keywords: Cancer Surveillance, Technology Integration, Data Sharing, Artificial Intelligence (AI), Global Health Collaboration

Do Health Insurance Effects on Cancer Survival Vary by Cancer Type, Sex, and Age?

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Background/ Purpose: Health insurance coverage has been associated with disparities in cancer survival in many countries. However, it remains unclear whether these effects vary by cancer type, sex, or age in China. We aimed to investigate the extent to which insurance-related survival disparities are modified by these factors using a national multicentre cancer cohort.

Methods / Approaches: We analysed data from 52,103 patients diagnosed with lung, stomach, colorectal, oesophageal, or female breast cancer between 2016 and 2017 across 23 hospitals in 12 Chinese provinces, representing populations with diverse socioeconomic backgrounds. Patients were followed until December 31, 2023. Health insurance was categorised as the New Rural Cooperative Medical Scheme (NRCMS), urban insurance, or other types. Multivariable Cox proportional hazards models estimated hazard ratios (HRs) for all-cause mortality comparing NRCMS to urban insurance, with interaction terms to assess effect modification by sex and age (< 65 vs. ≥65 years).

Results: Of the cohort, 48.3% were covered by urban insurance, 23.0% by NRCMS, and 28.7% by other types. NRCMS coverage was associated with higher mortality relative to urban insurance, particularly among women (HR 1.73, 95% CI 1.64–1.83 vs. men: HR 1.27, 95% CI 1.23–1.32; $p < 0.001$ for interaction) and patients aged < 65 years (HR 1.45, 95% CI 1.39–1.51 vs. ≥65 years: HR 1.28, 95% CI 1.17–1.40; $p=0.017$ for interaction). Among lung cancer patients, disparities were greater in women (women: HR 2.33 vs. men: HR 1.51; $p < 0.001$ for interaction), notably in stage II and IV disease. In female breast cancer, disparities were more pronounced in younger women (< 65 years: HR 1.68 vs. ≥65 years: HR 1.24; $p=0.012$ for interaction).

Conclusion: Cancer patients with NRCMS, especially women and those younger than 65 years, experienced significantly higher mortality. These findings underscore the need to enhance insurance equity to improve cancer outcomes in vulnerable populations in China.

Keywords: Health insurance, Cancer survival, Age-specific disparities, Sex-specific disparities, China

Survival Disparities Between Rare And Common Breast Cancer Subtypes: A SEER 17-Registry Analysis (2000–2022)

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Background/ Purpose: We compared overall survival (OS) between women aged ≥30 years with rare versus common invasive breast cancers diagnosed in the SEER 17-registry database (2000–2022), and identified factors associated with mortality.

Methods / Approaches: Female patients aged ≥30 years with known summary stage (localized, regional, distant) were included. Based on previously defined rare cancer classification in the USA which used RARECAREnet methodology, histology codes of invasive ductal carcinoma and invasive lobular carcinoma were classified as “common”, and all other types as “rare”. We estimated Kaplan–Meier survival at 1, 3, 5, 10, and 15 years and compared curves by log-rank test. Multivariable Cox proportional hazards models adjusted for age group (30–49, 50–64, ≥65 years), year of diagnosis (2000–2006, 2007–2012, reference 2013–2022), and stage (localized reference, regional, distant) were fitted for three models: overall, rare only, and common only.

Results: Among 979 798 women (119 418 rare; 860 380 common), 386 390 deaths occurred. One-year OS was 96.2 % (95 % CI 96.2–96.3) for common versus 85.3 % (85.1–85.5) for rare ($p < 0.001$); at 5 years: 82.3 % (82.2–82.3) vs. 66.2 % (66.0–66.5); at 15 years: 56.1 % (56.0–56.3) vs. 42.3 % (41.9–42.6). In the overall Cox model, rare histology was associated with higher mortality (HR 1.29; 1.28–1.30, $p < 0.001$). Compared with ages 30–49, hazards increased for ages 50–64 (HR 1.41; 1.39–1.42) and ≥65 (HR 4.37; 4.33–4.42). Diagnosis before 2013 carried worse survival (HR 2000–2006 1.24; 1.22–1.25; HR 2007–2012 1.12; 1.11–1.13). Regional and distant stages conferred HRs of 1.77 (1.76–1.79) and 9.38 (9.28–9.47), respectively. Models restricted to rare or common subgroups showed similar patterns.

Conclusion: Survival of rare breast cancers is substantially lower than common types at all time points. Advances in diagnosis and treatment after 2013 improved overall survival, yet rare tumors remain at a distinct disadvantage. Tailored strategies to optimize management are urgently needed.

Keywords: breast cancer, rare cancer, survival disparities

Evolving Cancer Survival In Taiwan: A 25-Year Population-Based Analysis And Nowcasting With The Survivorship-Period-Cohort Model

(1st Prize, IACR 2025 Poster Awards)

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Background/ Purpose: Cancer has been the leading cause of death in Taiwan for over 40 years. Monitoring long-term survival trends is essential for evaluating the effectiveness of cancer control strategies and guiding improvements in clinical outcomes. This study aimed to estimate 25-year trends and the most recent 5-year relative survival rates using a survivorship-period-cohort model and to assess the current TNM stage distribution and stage-specific survival.

Methods / Approaches: This population-based study analyzed 2,093,942 cancer cases diagnosed in individuals aged 15 to 99 years between 1996 and 2020, using data from the Taiwan Cancer Registry covering 25 solid tumor types. Stage-specific analysis was limited to 17 cancers with TNM data available from 2010 onward. Five-year relative survival was estimated using the Ederer II method for diagnoses from 1996 to 2017 and the survivorship-period-cohort model for 2018–2020.

Results: The 5-year relative survival for all cancers increased from 47.3% in 1996 to 62.5% in 2020. Notable survival gains were observed: 27% for small intestine cancer, 24% for lung cancer (34% for lung adenocarcinoma), and 16% for liver cancer. In contrast, survival declined in cervical cancer (10%), brain and central nervous system cancers (9%), and renal pelvis cancer (6%). Revisions to the AJCC staging system affected stage distribution, particularly for cancers of the oral cavity, oropharynx, hypopharynx, esophagus, lung, prostate, and bladder, resulting in significant stage migration. In lung cancer, while the definition of stage IV remained unchanged, the proportion of stage I diagnoses increased from 15% to 28%, whereas stage IV diagnoses declined from 59% to 49%. Stage-specific survival improved for most cancers, particularly liver and lung, although declines in early-stage survival were observed for cervical and bladder cancers.

Conclusion: This study offers valuable insights into long-term cancer survival in Taiwan, showing substantial improvements across various cancer types driven by early detection and treatment advances.

Keywords: cancer stage, relative survival, solid tumors, survivorship-period-cohort model, population-based study

Incidence Rates of Tobacco Related Cancers By Deprivation Quintiles In Ireland 2014 to 2018

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Background/ Purpose: Recent trends in tobacco-related cancer incidence rates by deprivation have not been examined previously in Ireland. This study examines these trends, using National Cancer Registry of Ireland data from 2014 to 2018.

Methods / Approaches: Age-standardised incidence rates per 100,000 by deprivation quintile were estimated for 19 cancers causally related to tobacco, as per the International Association for Research on Cancer and World Cancer Research Fund. This analysis used the Pobal 2016 indices of deprivation at electoral division (ED) level, incorporating information from the national census of that year.

Results: In general, people living in the most deprived areas had higher incidence rates of tobacco related cancers compared to those living in the least deprived areas. Between 2014 and 2018, the age-standardised incidence rates for all tobacco related cancers combined, ranged from 247.4 to319.7 cases per 100,000 population, increasing from the least deprived to the most deprived socio-economic quintiles. An increase in rates with an increase with deprivation was observed, although this varied across the individual cancer sites. For example, lung cancer had incidence rates of 62.8 and 99.7 for the least and most deprived quintiles, respectively. Similarly, stomach cancer had incidence rates of 13.3 and 20.1 for the least and most deprived quintiles, respectively. Other cancers showed smaller disparities in incidence rates across deprivation quintiles. Liver cancer, for instance had incidence rates of 9.5 and 10.6 for the least and most deprived quintiles respectively.

Conclusion: Contrasting rates in tobacco related cancer incidence by deprivation quintiles likely reflect differential patterns in smoking prevalence across population groups. These findings underscore existing health inequalities that should be addressed to ensure optimal outcomes for all cancer patients.

Keywords: Deprivation quintiles, Tobacco related cancers

Cancer Registration In An Lmic: Insights From A Comprehensive Cancer Center In Luxor

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Background/ Purpose: Cancer registries are vital for informing cancer control, especially in low- and middle-income countries (LMICs) where data is limited. This study describes the Shefa Al Orman Hospital (SOH) Cancer Registry in Luxor, Egypt, which follows ICD-O3 and SEER staging.

Methods / Approaches: A prospective cohort registry was established at SOH from May 2016 to May 2024. Data were collected via house made electronic health records and included demographics, tumor site, morphology, stage, diagnosis method, survival, and geolocation. Descriptive statistics and crude rate calculations were used to analyze distributions and regional patterns.

Results: A total of 44,134 patients were registered: 42,807 adults and 1,327 children. Patients came from Luxor (44.7%), Qena (34.2%), and other governorates (21%). There were 22,479 (50.9%) cancer cases, 9,203 (20.8%) non-cancer (reflecting weak referral systems and limited primary care), 1,106 (2.5%) deaths before diagnosis (delayed presentation/referral), 6,737 (15.2%) lost to follow-up (suggesting fear or low awareness), and 2,491 (5.6%) referred. In females, top cancers were breast (42.8%), digestive (15.9%), and female genital (9.4%). In males: digestive (30.5%), respiratory (13.7%), and urinary (13.4%).Annual crude cancer rates per 100,000 (8 years):Luxor: Qesm Luxor(246.5), Armant(191.6), Tiba(184.4), Qurna(178.2), Luxor Markaz(162.7), Esna(136.0).Qena: Southern Qena: Qus (110.3), Naqada (97.0), Qeft (76.4). Northern Qena: Qena Markaz (43.4), Farshout (39.7), Deshna (38.1), Nag Hammadi (48.2) The lower rates in northern Qena likely reflect that southern Qena residents primarily attend SOH, while those in the north often seek care in Sohag.

Conclusion: The SOH registry shows that high-quality cancer registration is feasible in LMICs. It highlights the need for better early detection, awareness, referral efficiency, and care coordination, offering a model for cancer control in resource-limited settings.

Keywords: Cancer Registry, low- and middle-income countries (LMICs), Real World Data

Squamous Cell Carcinoma Of The Larynx: A Single-Center, Cross-Sectional Clinical Study

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Background/ Purpose: Larynx cancer accounts for 1–2% of all cancers globally. Treatment modalities are surgery, radiotherapy, and chemoradiotherapy, with early-stage tumors often managed successfully by single-modality therapy. Five-year survival for early glottic cancers is 75–90%; however, the prognosis worsens significantly with nodal involvement or advanced-stage. The aim of this study is to present the sociodemographic characteristics, staging, and survival outcomes of patients with laryngeal cancer at a single center.

Methods / Approaches: Cases diagnosed with laryngeal squamous cell carcinoma between 2010 and 2024 were identified. Data on sociodemographic characteristics, clinical and radiological staging, treatment methods and survival outcomes were collected and analyzed. Statistical analysis were performed using SPSS30.0.

Results: Of the 356 cases with clinical follow-up data, 95.2% were male. 34.5% of the cases were treated surgically and 40.4% were in the early stage. The mean age of patients who underwent surgery was 60.48 in the early stage and 61.47 in the advanced stage; while in patients who received non-surgical treatment, it was 64.34 and 64.47 respectively. 41.7% of the cases died. 44.5% of the cases were Tis-T2, while 55.5% were T3-T4b. 26.5% of the cases were N+ and 4.2% were metastatic. The mean follow-up period was 50 (0-138) months and 5-year overall survival was 62.3%. Survival was 71.6% in early stage cases and 55.9% in advanced stage cases ($p < 0.01$). Survival was 63.9% in patients who received surgical treatment and 61.6% in those who received non-surgical treatment ($p < 0.77$). 20% of 145 early-stage cases and 44.5% of 211 advanced-stage cases underwent surgical treatment. Survival was 66.4% in early-stage cases with surgery and 73.2% in those without surgery ($p < 0.79$); and 63.3% and 50% in advanced-stage cases, respectively ($p < 0.02$).

Conclusion: The results of our series of 356 cases including treatment, stage and prognosis data will make a significant contribution to the literature.

Keywords: larynx, squamous, carcinoma, survival, stage

Conclusion: PBCRs provide comprehensive and detailed data on cancer cases, enabling international comparability. Although, no universal mapping solution fits all registries, so variations in results across registries are to be expected. Mapping cancer registry data to a common structure and vocabulary (OHDSI's OMOP-CDM) has the potential to enhance the ability to link PBCR datasets with other health data sources.

Keywords: Population-Based Cancer Registries, Common Data Model, Data Interoperability

A Geographical Pattern Analysis Of Breast Cancer Incidence: Data From Ibadan Cancer Registry (Ibcr) 2020-2024.

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Background/ Purpose: Breast cancer remains the most common malignancy in women worldwide.Ibadan is located in Oyo state, South-western Nigeria; a capital city with a total population of 7,976,100 in 2022 and nearly 4 million within its metropolitan area. It has eleven local government areas spread over a rural urban gradient. The Ibadan cancer registry covers these eleven LGAs in Ibadan and environs and so were able to look at patterns of cases captured in our database to know where most cases occurred.

Methods / Approaches: We reviewed patients' data including address, sex, and diagnoses. We stratified cases on the basis of their loaclity of domicile, this reagrdless of the various other contributors to breast cancer risk. The incidence of all breast cases was analysed from the eleven local government areas of Ibadan and we were able to compare the relative contribution from the different local governments to figures of breast cancer incidence.

Results: A total of 1,352 cases of female breast cancer were diagnosed between 2020 and 2024, accounting for (26.9%) of all 5,034 cancer cases diagnosed during this period. Age standardized rate for breast cancer within this period was 37.0 per 100,000 person-years. There was an observed variation in the incidence of breast cancer by local government area with the Urban local governments producing higher numbes of cases than the more rural local government areas.

Conclusion: Our data seem to support the established rural-urban variation in breast cancer incidence. Suspected contributing factors will include all Socioeconomic Status (SES) determinants such as educational achievements and enlightenment, dietary habits, Access to Healthcare, Environmental Exposures, and Occupational Risks.We recommend further investigation into these factors as they mey relate to cases of breast cancer occuring in the catchment area of our registry.

Keywords: Breast Cancer; Geographical occurrences

Non-Cancer Causes Of Death In Cancer Patients: A 15-Year Population-Based Analysis

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Background/ Purpose: Using data from the population-based cancer registry of Arkhangelsk Oblast and the Nenets Autonomous Okrug (PBR AO and NAO), this study assessed the frequency and trends in non-cancer-related mortality among patients diagnosed with 12 common malignant neoplasms (MNs). A secondary aim was to calculate the relative risk of non-cancer mortality in these patients compared to the general population.

Methods / Approaches: Data from patients diagnosed with 12 invasive MNs between 2008 and 2023 were extracted from the PBR AO and NAO database. Trends in mortality from index MNs (iMNs), non-index MNs, and non-cancer causes were analysed for each iMN. Age-standardised mortality ratios (SMRs) were calculated for cardiovascular (CVD) and respiratory diseases (RD) in cancer patients relative to the general population.

Results: The analysis included 51,076 MN cases. Over the study period, there was a significant increase in the proportion of non-cancer deaths, rising from 8.9–33.2% (2008–2009) to 4.5–47.2% (2022–2023). During the COVID-19 pandemic, non-cancer deaths accounted for 16.6% (lung cancer) to 58.0% (prostate cancer) of mortality, with RD-related deaths peaking at 26.7%. CVDs were the leading non-cancer cause of death, representing 39.8% (laryngeal cancer) to 66.5% (prostate cancer) of cases in 2022–2023. SMRs for CVD increased across all iMNs, with oral cavity and cervical cancer rising from 1.5 (95% CI: 0.3–4.5) and 3.9 (95% CI: 2.1–6.7) in 2008–2009 to 10.0 (95% CI: 6.2–15.3) and 12.8 (95% CI: 8.5–18.3) in 2022–2023, respectively. The relative risk of RD mortality among iMN patients during COVID-19 was 45–105 times higher than in the general population.

Conclusion: Non-cancer diseases constitute a significant and growing proportion of mortality in MN patients. The relative risk of CVD- and RD-related death in this cohort can be an order of magnitude higher than in the general population. During the COVID-19 pandemic, cancer patients faced a 45–105-fold increased risk of RD mortality.

Keywords: non-neoplastic causes of death, population-based cancer registry, standardised mortality ratios, cardiovascular diseases, respiratory diseases

Multimodality And Partial Overlapping Data Against Model Generalizability: A Pilot Study On European Cancer Survivors

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Background/ Purpose: Generalizability of epidemiological models is crucial to make them efficient in different contexts (e.g. populations living in different countries). In these regards, aspects like multimodality (i.e. the integration of data from multiple sources) and partially overlapping variables (i.e. variables that are available in some, but not all, datasets) may be challenging. We will discuss these methodological aspects in the context of a pilot study nested in the European Joint Action (namely PreventNCD) that aims at externally validate and extend a causal model to study long-term effects in cancer survivors leveraging population-based cancer registries' (PBCRs) data.

Methods / Approaches: We took advantage of a causal Bayesian network to study cardiovascular risk in adolescents and young adults 1-year breast cancer survivors developed using clinical, PBCRs and administrative data in Italy. We identified four European countries (Estonia, Belgium, Denmark and Norway) interested in the pilot. All countries were asked to answer to a comprehensive survey to properly understand which data sources they can access to, their feasibility to participate to the pilot and the data sharing modalities.

Results: As concern the model external validation, according to the survey, all the four European PBCRs have the chance to collect all the data sources needed to identify both cancer treatments and cardiovascular outcomes (i.e. hospital discharge records, outpatient and drug flow) even though with time constraints in two PBCRs. With regards to the model extension, three PBCRs have also the possibility to link additional socio-economical aspects, and one CR can provide information on self-reported life-style factors.

Conclusion: The results of the survey will be used to define the protocol to be used for the data collection and analyses. Analyses will be tailored also considering the emerged data sharing constraints (e.g. envisioning scripts sharing and federated learning). The protocol will be finalized by August 2025.

Keywords: Generalizability, Causal Models, Cancer survivors, Late effects, JA PreventNCD

A Registry-Based Approach To Tracking Germline Cancer Testing Information In The Victorian Population.

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Background/ Purpose: Familial cancer germline testing identifies pathogenic variants in cancer-predisposition genes. Results can impact surgical, targeted systemic therapy and second cancer management decisions, and inform prevention strategies for high-risk relatives. In Victoria, four familial cancer services (vFCSs) provide free access to genetic counselling, testing, long-term support and clinical trials for individuals who meet testing criteria. Despite this, many eligible patients may not be referred to the FCS. This prospective study examined vFCS referral patterns and explored the acceptability of direct contact from the Victorian Cancer Registry (VCR) to inform patients of their germline testing eligibility.

Methods / Approaches: Twelve rare tumour types who fulfilled vFCSs testing criteria based on histopathology and age at diagnosis irrespective of family history were identified. All prospective patients notified to the VCR, between August 2023 and June 2024 who fulfilled these criteria were identified and iteratively crossed matched monthly against patients referred to a vFCS. VFCSs staff recorded whether patients had undergone germline testing and where this had occurred. For patients not referred to a vFCS, the VCR contacted their treating specialists to determine if private testing had occurred. In tandem, patient interviews explored acceptability of being directly approached by the VCR to inform them of testing eligibility.

Results: Of 823 eligible cases, 497 (60%) were referred to a vFCSs. Referral rate varied by tumour type; lowest for sarcoma (26%), pancreatic (27%) and renal tumours (31%). Contacting treating clinicians was challenging, resource-intensive and generated limited data. In contrast, most patients were supportive of being contacted by the VCR to communicate testing eligibility, provided communications were sensitive, clear and secure.

Conclusion: vFCS referral of rare cancers remains suboptimal and potentially inequitable. Registry-led patient contact appears acceptable and may enhance equity of access but requires further evaluation across diverse populations. Clinician perspectives are currently being explored.

Keywords: rare, hereditary, germline, registry, referral

Changes in Mammography Uptake in Türkiye: A Decomposition Analysis of the 2016-2022 Health Surveys

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Background/ Purpose: This study aimed to examine changes in mammography uptake among women aged 30 and over in Türkiye between 2016 and 2022 and to identify contributing factors using multivariate decomposition analysis.

Methods / Approaches: Data were drawn from the nationally representative 2016 and 2022 Türkiye Health Surveys conducted by the Turkish Statistical Institute (TURKSTAT). The analysis included women aged 30 years and older. The dependent variable was self-reported mammography uptake. Independent variables comprised sociodemographic characteristics, lifestyle factors, self-rated health, and healthcare utilization. The Blinder-Oaxaca multivariate decomposition method was applied in Stata 11 to assess the contribution of changes in population characteristics and the effects of these characteristics over time.

Results: The analysis included 16,061 women (2016: n=8,328; 2022: n=7,733). Mammography uptake increased from 38.9% in 2016 to 44.8% in 2022, with a significant difference of 5.85 percentage points ($p < 0.001$). This increase was largely explained by compositional changes (81.4%; $p < 0.001$), while 18.6% was attributed to changes in the effects of characteristics ($p = 0.205$). Higher income contributed most to the increase, followed by university education and family physician registration. In contrast, higher obesity and chronic disease prevalence had a modest negative effect. The influence of income ($E = 0.03763$; 64.4%; $p < 0.001$) appeared to weaken in 2022, while the role of family physician registration ($E = 0.00254$; 4.3%; $p < 0.001$) became more influential.

Conclusion: The increase in mammography uptake was mainly driven by improvements in income, education, and access to primary care. However, reduced effects of income and insurance, along with persistent disparities among certain groups, highlight the need for targeted interventions and stronger engagement of primary care to ensure equitable access to cancer screening.

Keywords: Inequality, Decomposition, Screening, Blinder-Oaxaca, Breast cancer

Patterns And Trends In Premature Mortality From Hepatobiliary Cancers In China: A Population-Based Analysis

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Background/ Purpose: Hepatobiliary cancers are a major cause of cancer-related death in China. In 2015, the United Nations introduced SDG Target 3.4 to reduce premature mortality from non-communicable diseases by one-third by 2030. However, limited data exist on premature deaths from hepatobiliary cancers in China. We aim to assess the burden in 2022 and trends from 2010 to 2018 to determine whether targets are being met.

Methods / Approaches: We collected data from 106 high-quality cancer registries across China, covering five hepatobiliary cancer subtypes. We used standard life table methods to estimate age-specific premature mortality (ages 30–69) in 2022. We assessed trends by sex and region. We further made projections to evaluate progress toward the 2030 goal.

Results: In 2022, the premature mortality rate due to hepatobiliary cancers was 1.07%. Overall, it was higher in males (1.61%) than in females (0.53%), and higher in rural areas (1.40%) than in urban areas (0.91%). From 2010 to 2018, the premature mortality rate declined from 1.48% to 1.07% (with an average annual rate of –4.09%). Declines were steeper in females (–4.40%) and in developed regions like East China (–5.54%). Hepatocellular carcinoma declined across most groups except in the northwest. Gallbladder cancer, extrahepatic cholangiocarcinoma, and ampulla of Vater cancer showed significant declines in specific regions. These trends suggest that most groups are on track to meet the 2030 target. However, intrahepatic cholangiocarcinoma (ICC) did not decline in any subgroup and will require accelerated efforts.

Conclusion: Premature mortality from hepatobiliary cancers in China is declining overall, with significant variation by subtype, sex, and region. Most groups are on track to meet SDG Target 3.4, but ICC remains an emerging concern needing targeted interventions.

Keywords: premature mortality, hepatobiliary cancer, prevention

Evaluating The Performance Of Retrieval-Agumented Generation (Rag) Model For Cervical Cancer Screening

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Background/ Purpose: The WHO recommends that 70% of women undergo cervical cancer screening, as early detection highly improves treatment outcomes. However, Japan's screening rate is 43.6% in 2022, the lowest among high-income countries—partly due to insufficient public awareness. Recent advancements in generative Artificial Intelligence (AI) have driven disruptive innovation in healthcare. Nevertheless, the large language models (LLM) still face limitations in delivering up-to-date scientific guidance to health professionals and patients. To address these challenges, Retrieval-Augmented Generation (RAG) has offered new opportunities to enhance public awareness by enabling access to evidence-based knowledge. The aim of this study is to evaluate the quality of RAG models in the context of cervical cancer screening.

Methods / Approaches: We explored the application of a GPT-4-based RAG system for cervical cancer screening by employing a bibliometric approach to collect evidence-based literature published in English during the period of 2008-23. This study was applied Latent Dirichlet Allocation (LDA) using the Gensim library in Python, and topic quality was assessed through coherence score calculations. The RAG model's performance was compared with the publicly available AI-powered answer engine, Perplexity.

Results: The entry-level question demonstrated the highest coherence score of 0.644 in our RAG model, indicating strong semantic consistency as a high coherence score is closer to 1, compared to 0.474 achieved using Perplexity. For more scientifically complex questions, the RAG model also outperformed Perplexity, achieving a coherence score of 0.253 vs 0.236.

Conclusion: This study highlights the potential of RAG models to support cervical cancer screening awareness by delivering evidence-based, accessible information. The high coherence scores suggest that the RAG model generates semantically consistent and conceptually cohesive responses. Given its strong coherence performance, the RAG model may be effectively integrated with specialized scientific knowledge to enhance early detection efforts and contribute to more effective cancer control strategies at the population level.

Keywords: Cervical Cancer Screening; AI in Preventive Healthcare; Retrieval-Augmented Generation (RAG) for Health Communication; LDA-Based Topic Modeling; Medical AI Evaluation

Trends And Projections In Hematological Cancer Epidemiology: Insights From Spanish Cancer Registries

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Background/ Purpose: Population-based epidemiological data on hematological malignancies are essential for understanding the cancer burden and its impact on patients and society. This study aimed to project the incidence of hematological cancers in Spain by 2025 and to estimate five-year net survival after diagnosis.

Methods / Approaches: All hematological malignancies diagnosed between 2000 and 2018 from the Spanish Network of Cancer Registries (REDECAN) were included. Incidence projections for 2025 were obtained by applying observed trends of the territories covered by registries from 2009

to 2018 to the estimated Spanish population of 2025 using Poisson regression models. Five-year net survival was estimated overall, and stratified by age, sex, and diagnostic period.

Results: By 2025, an estimated 25,770 new hematological malignancies will be diagnosed in Spain. Lymphoid neoplasms will represent 71% of cases (N = 18,357), with an age-standardised incidence rate (ASIR) of 34.9 (95%CI: 34.4–35.4) per 100,000 person-years. Myeloid neoplasms will account for 7,148 cases, with an ASIR of 13.6 (95% CI: 13.2–13.9). The overall five-year net survival was 62%, with better outcomes for lymphoid neoplasms (68%) compared to myeloid neoplasms (50%). Age had a strong impact on prognosis: patients under 75 years had survival rates around 80%, while those over 74 years had rates near 40%. Survival improved slightly over time, from 56% in 2000–2005 to 62% in 2012–2017.

Conclusion: The projections and survival data offer critical insight for future planning, including the implementation of advanced diagnostic and therapeutic interventions tailored to the evolving landscape of hematological malignancies in Spain.

Keywords: hematological cancers, Cancer Epidemiological surveillance, net survival, cancer incidence estimations, incidence trends

Strengthening Cancer Screening Inıtiatives In Gulf State Countries: The Gulf Cdc-Iarc Train-The-Trainer Program

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Background/ Purpose: Cancer screening is vital for early detection and improved outcomes; however, significant gaps in quality, implementation, and population uptake of screening programs persist across the Gulf states. These challenges extend beyond service delivery to include issues with data systems and cancer registries, critical for planning, monitoring, and evaluating screening initiatives. To address these gaps, The Gulf Center for Disease Prevention and Control (Gulf CDC) partnered with the International Agency for Research on Cancer (IARC) to create a train-the-trainer program to enhance cancer screening initiatives in the Gulf states.

Methods / Approaches: The Gulf CDC, utilizing its governance structure, formed a Cancer Working Group from national cancer screening program managers across Gulf states. This group nominated master trainers and managed the training program's implementation. The program focused on sustainability by establishing a network of trainers to strengthen cancer screening systems. Over six months, the program utilized a hybrid model featuring six live sessions led by global experts, pre-recorded online modules, and three country-specific practical assignments. Participants were selected by national focal points, ensuring diverse representation from ministries of health and relevant organizations. The program concluded with a three-day in-person workshop that enhanced practical skills for overcoming barriers, implementing interventions, engaging stakeholders, and integrating cancer registry data with screening efforts for better outcomes.

Results: By the end of 2024, a total of 22 master trainers had successfully completed the program. Following graduation, these trainers are expected to adapt the training content to national contexts and conduct local capacity-building activities, aiming to train minimum 20 individuals annually within their respective Ministries of Health. Potential challenges, including participant dropout and staff turnover, were addressed through the governance structure of the Cancer Working Group.

Conclusion: In conclusion, this program exemplifies effective international collaboration and multilayered governance to enhance cancer screening practices and ensure lasting impact in the Gulf region.

Keywords: Cancer Screening, Capacity Building, Public Health, Data Integration, Collaboration and Training

Modelling Expected Cancer Incidence Rates For The Top 5 Cancers In South Africa, 2017-2023

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Background/ Purpose: To improve data completeness, population-based cancer registries (PBCRs) are set-up to gather information from all cancer data sources. This study compares the expected ASIRs for the top five cancers in the Ekurhuleni population-based cancer registry (EPBCR) using the observed ASIRs from the national pathology-based cancer registry in South Africa (SA).

Methods / Approaches: Expected ASIRs for EPBCR were calculated by employing the morphologically verified factor from the EPBCR and the observed ASIRs from the pathology-based cancer registry. ASIRs were plotted to illustrate the differences between the ASIRs of both registries and the expected rates. Average ASIRs from 2017-2023 were compared to assess if EPBCR's rates exceeded those of the pathology registry and aligned with expected rates.

Results: EPBCR's observed ASIRs were lower than those of the pathology registry's, while its expected ASIRs were higher than in both registries, except in cervical cancer. The expected ASIRs (24/100 000) for cervical cancer were matching with the observed rates (24/100 000). The expected ASIRs for breast, colorectal, melanoma, and uterine cancers were 35, 7, 3 and 6/100 000 respectively, higher than the observed 28, 6, 2 and 5/100 000, respectively. In men, all expected ASIRs were higher than the observed rates. Colorectal cancer (11 vs. 8/100 000), lung cancer (9 vs. 4/100 000), melanoma (5 vs. 3/100 000) and non-Hodgkin lymphoma (6 vs. 3/100 000). The most notable discrepancy in men was in prostate cancer, where the EPBCR's ASIR of 26/100 000 was much lower than the pathology registry's 45/100 000 and the expected 49/100 000.

Conclusion: A single PBCR may distort rates for overrepresented population groups. The EPBCR lacks sufficient private healthcare data, which is well-represented in the pathology registry. Additionally, the absence of mortality data and the exclusion of certain hospitals from the EPBCR impact data comprehensiveness. Therefore, multiple PBCRs are essential.

Keywords: cancer incidence, age-standardized incidence rates, morphologically verified factor, pathology registry, population-based cancer registry

SNOMED-CT Or Who's ICHI: Assessing The Best Option For Standardising The Netherlands Cancer Registry's Procedures

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Background/ Purpose: An internally developed coding system is currently in use for procedures in the Netherlands Cancer Registry (NCR). The lack of an international standard complicates international comparability and understanding of NCR procedure data. We assessed the feasibility and consequences of adopting Systematized Nomenclature of Medicine Clinical Terms (SNOMED-CT) and WHO's International Classification of Health Interventions (ICHI), to determine which is most suitable for standardizing procedures in the NCR.

Methods / Approaches: A random selection of 136 therapeutic procedures for breast, lung, and colorectal cancers were mapped to both SNOMED-CT and ICHI by a multidisciplinary team. For SNOMED-CT, concepts in the international and Dutch vocabulary were allowed. Mappings were validated by an international expert and epidemiologists specialized in the (treatment of) applicable tumor types. Subsequently, for both standards, the impact on scientific studies and clinical auditing was evaluated via interviews with internal stakeholders (epidemiologists, analysts, data registrars, data warehouse engineers).

Results: Exact concept matches were identified for 75% of unique procedures in SNOMED-CT and18% in ICHI. More general concepts, resulting in information loss, were identified for 21% of procedures in SNOMED-CT and 60% in ICHI. More specific concepts were not used in SNOMED-CT, while these incorrect mappings were required in 7% of procedures for ICHI. Incorrect mappings to concepts being both more general and specific were required in < 1% for SNOMED-CT and 8% for ICHI. Three percent of procedures could not be mapped to any SNOMED-CT concept, which was 7% for ICHI. Internal stakeholders considered it valuable to standardize procedure data, but expressed serious concerns about information loss negatively impacting scientific and auditing activities. This information loss is more significant in ICHI compared to SNOMED-CT.

Conclusion: Standardizing NCR procedures to SNOMED-CT resulted in less loss of information than standardizing to ICHI. As the stakeholders indicated negative impact of information loss, standardizing to SNOMED-CT is most appropriate.

Keywords: Data standards, SNOMED-CT, ICHI

Processing Workflow Of The European Cancer Registries Data Submitted To The European Cancer Information System

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Background/ Purpose: To ensure quality and comparability of the cancer registry data submitted to the European Cancer Information System (ECIS), the Joint Research Centre (JRC) developed an automated data processing workflow to provide detailed, harmonised and timely feedback to the European cancer registries (CRs).

Methods / Approaches: Data prepared by CRs according to the 2022 ECIS Data Call protocol and submitted via the secure JRC-ENCR portal, were processed using automated IT tools. After data format verification, internal data consistency was checked by the JRC-ENCR Quality Check Software (QCS). Inconsistencies were reported to CRs for verification. Corrections received by CRs were consolidated and data re-checked by the QCS for selection of multiple primaries (MPs). Final cleaned data was aggregated by the JRC CRs Aggregation Tool for ECIS (CRATE) and compared with international studies, including IARC Cancer Incidence in Five Continents series. Incidence figures were visualised in the ECIS private website to be verified and approved by CRs before publication in the ECIS web application.

Results: More than 24 million individual records from 85 CRs were validated. On the total number of records submitted, the median percentage of inconsistencies flagged by the QCS was 11.1% (Inter Quartile Range-IQR: 7.5%-20.3%). Out of these, the median percentage of compulsory revisions requested to CRs was 0.03% (IQR: 0.01-0.07), while the proportion of MPs was 0.8% (IQR: 0.5-1.2). After CRs corrections, the median proportion of excluded cases was 0.2% (IQR: 0.1%-0.5%), of which false MPs represent the 98.7% (IQR: 94.4%-100.0%). Following data cleaning and aggregation, the median proportion of cases excluded from the ECIS incidence analysis was 1.5% (IQR: 0.8%-2.6%) of the original dataset.

Conclusion: Results showed high variability of detected inconsistencies across CRs, emphasising the need for standardised validation procedures to ensure European data accuracy and comparability, involving the CRs in the validation process and providing timely support in data revision.

Keywords: JRC, ECIS, QCS, ENCR, validation

Impact Of Smoking/Drinking Prevalence On Association Between Areal-Level Socioeconomic Status And Cancer Mortality In Japan: A Nationwide Cross-Sectional Ecological Study

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Background/ Purpose: In Japan, disparities in cancer outcomes due to socioeconomic differences are widening at the community level. This study examined whether interventions targeting smoking and drinking could reduce cancer mortality disparities by evaluating these behaviors as mediators between socioeconomic status and cancer mortality.

Methods / Approaches: Analyses were conducted at the municipality level. We used the normalized areal deprivation index (normADI) from the 2015 National Census to assess socioeconomic status. Empirical Bayes standardized mortality ratios (SMRs) for major cancers in Japan (stomach, colorectal, liver, pancreatic, lung, and female breast) were calculated from 2013–2017 Vital Statistics. Mediators included standardized smoking and heavy-drinking ratios (SSR/SDR), using Data from Specific Health Checkups over the same period. Mediation analysis was stratified by sex and cancer type to assess direct and indirect effects of normADI on cancer mortality via SSR/SDR.

Results: We observed positive indirect correlations of SSR/SDR on SMRs for stomach, colorectal, pancreatic, lung cancers in both sexes and female breast cancer. This indicates that in areas with higher deprived areas, elevated prevalence of smoking/drinking is associated with an increase in mortality from these cancers. In addition, a direct positive correlation between normADI and SMR of liver cancer was observed in both sexes, which can be due to the higher prevalence of hepatitis B and C virus infections, a well-established risk factor, in more deprived areas. The negative direct correlation between normADI and SMR for female breast cancer was observed, which might suggests a higher prevalence of reproductive risk factors in less deprived areas.

Conclusion: The positive indirect correlation thorough smoking/drinking suggested that intensified targeted interventions designed to lower smoking/drinking prevalence in deprived areas may effectively reduce socioeconomic disparities in cancer mortality. Furthermore, the direct correlations with liver and female breast cancer indicate the necessity of considering measures beyond smoking and drinking interventions, which underscores the need for further research.

Keywords: Cancer, Epidemiology, Socioeconomic disparities, Smoking, Drinking

Premature Cancer Mortality In China Based On Cancer Registry

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Background/ Purpose: Sustainable Development Goal 3.4 aims to reduce by one third premature mortality from non-communicable diseases by 2030. In China, approximately 2.57 million cancer-related deaths occurred in 2022. Population-based cancer registries are crucial for assessing cancer burdens and guiding policy. The National Cancer Center (NCC) of China regularly collects cancer registry data, ensures quality control and reports the nationwide statistics on cancer mortality in China.

Methods / Approaches: Data from 1073 cancer registries in China were submitted to the NCC in 2019. Quality control was conducted based on Chinese and international guidelines. Temporal trends in premature mortality rates from 2010 to 2019 were analyzed using data from 106 continuous cancer registries representing 8.85% of the Chinese population. Descriptive analysis, standardized mortality rates, and Joinpoint Regression were used to examine cancer-related deaths stratified by sex, area, and rural-urban status.

Results: In 2019, the premature mortality rate from cancer in China was 6.67%. Lung cancer had the highest premature mortality rate (1.87%), followed by liver cancer (1.15%). In southern China, liver cancer had the highest premature mortality rate, while lung cancer led in other regions. Nasopharyngeal cancer had a higher premature mortality rate in southern China. From 2010 to 2019, a significant decreasing trend of 1.9% per year was observed in premature cancer mortality, primarily due to declines in esophageal, stomach, and liver cancers.

Conclusion: Premature cancer mortality remains a significant issue in China, with lung cancer being the leading cause. Traditionally high-incidence digestive tract cancers in China still carried a substantial burden of premature mortality. Throughout the history of cancer prevention and control, there has been a notable decline in overall premature cancer mortality, particularly for cancers of the digestive tract. In the future, tailored screening, early diagnosis and treatment strategies should also be developed for different types of cancer to reducing premature cancer mortality.

Keywords: Cancer registry, Population-based, Premature mortality, Trend, China

Development, Translation And Implementation Of Canstaging+, Free Electronic Staging Tool For Cancer Registries

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Background/ Purpose: Cancer stage is a classification of the anatomic extent of cancer at diagnosis and is a key determinant of treatment and prognosis. Internationally agreed systems are used when assigning stage, including the 7th and 8th edition of the Union for International Cancer Control (UICC) TNM system, UICC Essential TNM, and the Toronto Paediatric Staging Guidelines (TPSG).

Methods / Approaches: CanStaging+ was developed as an electronic Cancer Staging tool by a team of IT and Staging experts to support improvements in completeness, quality and uniformity of cancer stage data globally.Collaborators from PBCRs have commenced translating the tool to Spanish, Malay, Japanese, Polish, French, Chinese and German. Feedback and learning was sought following recent integration of CanStaging into IT systems of the National Cancer Registry of Ireland and efforts to further integrate CanStaging into more PBCR IT systems are underway.

Results: A range of cancer sites have been developed based on Essential TNM (n=8), UICC TNM7 (n=22)and TNM8(n=25) and Toronto PCSG (n= 15). The CanStaging+ tool has also been successfully translated and integrated for automated use into the IT system of the National Cancer Registry of Ireland. The tool continues to serve users worldwide, with approximately 300 users using the online version of CanStaging+ weekly. It has achieved multiple endorsements including International Assn Cancer Registries, Int Assn for Research on Cancer and UICC.

Conclusion: The free electronic cancer staging tool for cancer registries, CanStaging+, is available as an online and offline resource and is intended to enhance the completeness and comparability of cancer staging data internationally, CanStaging+ is available at https://canstaging.org

Keywords: Cancer, Cancer Staging, Cancer Staging Tool

The Burden Of Cancer Attributable To High Body-Mass Index In The Eastern Mediterranean Region In 2022

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Background/ Purpose: Excess body mass index (BMI) is a major established modifiable risk factor for 13 cancer types. In the Eastern Mediterranean Region, about 28.6% of all adults (age 18+) are obese (BMI ≥ 30 kg/m²). To aid public health policy and future research directions, we quantified the cancer burden due to excess BMI in the Eastern Mediterranean Region.

Methods / Approaches: Population attributable fractions (PAFs) were calculated using relative risks from the World Cancer Research Fund and BMI data in adults from the Non-communicable Diseases Risk Factor Collaboration. With a 10-year lag period, PAFs were based on BMI estimates from 2012. The number of new cancer cases attributable to excess BMI was then estimated using national incidence estimates from GLOBOCAN 2022.

Results: Our analysis revealed that excess BMI contributed to 27,488 new cancer cases in the Eastern Mediterranean Region during 2022—representing 4.6% of all diagnosed cancers. The burden manifested disproportionately between genders, with 15 attributable cases per 100,000 women versus 7 per 100,000 men. Additionally, PAFs were higher in women than in men (5.4% vs. 2.5%). Among men, liver, colon and kidney cancers made up about two-thirds (71%) of BMI-attributable cancers, while in women, post-menopausal breast and corpus uteri cancers accounted for two-thirds (60%) of BMI-attributable cancer cases.

Conclusion: Without effective interventions targeting diet and physical activity, the cancer burden in the Eastern Mediterranean Region will likely increase, particularly among women. The gender disparity in BMI-attributable cancers underscores the need for tailored prevention strategies. Implementing evidence-based obesity reduction programs could significantly reduce regional cancer incidence.

Keywords: Obesity, Cancer burden, Eastern Mediterranean Region, Population attributable fractions

Impact Of Covid-19 Pandemic On Cancer Care In Tochigi Prefecture

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Background/ Purpose: This study was performed to assess the impact of the COVID-19 pandemic on cancer care in Tochigi Prefecture (population: 1.9 million) by comparing cancer registry data from 2019 (pre-pandemic) and 2020 (post-pandemic onset).

Methods / Approaches: Data were obtained from the Tochigi Cancer Registry, a population-based registry, for the years 2019 and 2020. To evaluate trends in registration timing and patient flow, data from hospital-based cancer registries at core cancer care hospitals in the prefecture were also analyzed.

Results: According to the population-based cancer registry, the number of newly diagnosed cancer cases decreased from 15,025 in 2019 to 14,476 in 2020 (−3.7%). Among males, cases declined by 5.1%, and among females, by 1.6%. Cancer sites showing more than a 5% decrease included the esophagus, stomach, larynx, lung, breast, prostate, kidney and urinary tract (excluding bladder), thyroid, and multiple myeloma. No reduction was observed for cancers of the rectum, pancreas, cervix uteri, corpus uteri, ovary, bladder, brain and central nervous system, malignant lymphoma, or leukemia. Screening-related cancers—including those of the stomach, colon, lung, breast, and prostate—showed noticeable declines. By contrast, no decline was observed in colorectal and cervical cancers among females. Hospital-based cancer registry data revealed sharp declines in monthly registrations, particularly in May and August. The total number and proportion of screening-detected cases also decreased. However, there was no notable change in the number of patients from outside Tochigi Prefecture who sought care within the region.

Conclusion: The COVID-19 pandemic had a measurable impact on cancer care in Tochigi Prefecture, especially for cancers typically detected through screening. The drop in registrations during May and August likely reflects the effects of high infection periods and state-of-emergency declarations.

Keywords: Population based cancer registry, Hospital based cancer registry, Covid-19

Breaking Barriers: Using Cancer Registries And Oncologist Referrals To Deliver Equitable Financial Support

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Background/ Purpose: In Low and Middle Income Countries, cancer patients often face significant financial hardships that hinder timely and complete treatment. Rajiv Gandhi Cancer Institute & Research Centre (RGCIRC) believes that no one should face cancer without the means to fight it. Since 1996, RGCIRC has pioneered a philanthropy-driven model that merges data precision with compassionate care. At the core of this approach is the cancer registry—not just a data repository, but a proactive tool for identifying patients in financial need. By integrating clinical insight from treating oncologists with data from the cancer registry, RGCIRC aims to proactively identify financially vulnerable patients and connect them with timely, tailored financial assistance.

Methods / Approaches: The cancer registry at RGCIRC captures detailed clinical, demographic, and socioeconomic information. This allows early identification of patients at risk of financial distress. Treating oncologists, with their direct knowledge of patient circumstances, play a pivotal role by referring such individuals to the Department of Philanthropic Services.Upon referral, the patient is assessed using registry data and personal counseling. The philanthropic services team then links the patient to the most appropriate funding source be it government schemes (PMNRF, CMRF), corporate social responsibility (CSR) initiatives, NGO partnerships, or philanthropic donations. This collaborative approach ensures timely and need-based intervention.

Results: From 2019 to 2024, this integrated model significantly expanded its impact. Funding partners grew from 4 to 16 (300% increase), including government agencies, PSUs, and NGOs. The number of patients receiving support rose from 913 to 1,669—an 83% increase. Financial aid disbursed increased from INR 172.24 million to INR 541.45 million, a 214% rise. These outcomes underscore power of combining data intelligence with clinician involvement.

Conclusion: RGCIRC's registry-driven, oncologist-guided support model demonstrates how data and empathy can converge to break financial barriers in cancer care. It offers scalable, replicable framework to make cancer treatment equitable & accessible worldwide.

Keywords: Financial Hardships, Philanthropy, LMICs, Cancer Registry

Leukemia Incidence in Children and Adolescents in İzmir, Türkiye (1993–2017): an Age-Period-Cohort Analysis

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Background/ Purpose: Leukemia is the most frequently diagnosed cancer in individuals aged 0–19 years. This study aimed to examine the age-period-cohort (APC) effects on the temporal trends of leukemia incidence rates from 1993 to 2017 in Izmir.

Methods / Approaches: The data was obtained from the İzmir Cancer Registry. Age-specific incidence rates (ASIRs) per million were calculated for 5-year age and calendar periods. ASIRs were computed using World Standard Population and presented per million person-years. APC modeling was performed using the US NCI APC Web Tool to estimate net drift (overall annual percent change), local drifts (age-specific annual changes), age, period and cohort deviations, and their corresponding rate ratios (RRs).

Results: The overall ASIR increased from 47.2 (95% CI: 40.9–53.6) per million in 1993–1997 to 64.2 (95% CI: 57.2–71.2) per million in 2013–2017. The highest ASIRs were observed in the 0–4 age group with 108.5 (95% CI: 90.9–126.1) per million. APC analysis showed net drift of +1.85% per year (95% CI: 0.86–2.84) , indicating a sustained increase in leukemia incidence over time. Age deviations were significant ($p < 0.001$). Although period and cohort deviations remained non-significant, cohort RRs increased steadily across birth cohorts—from RR = 0.51 for the 1978 cohort to RR = 1.38 (95% CI 1.03–1.86) for the 2013 cohort, using 1998 as reference. A local drift peak of +3.1% per year was observed in the 15–19 age group, though this did not reach statistical significance ($p = 0.3969$).

Conclusion: Leukemia incidence among children and adolescents in İzmir has risen steadily over the past two decades. These findings highlight the needs of follow-up those age group and should

prioritize at national level and further research into genetic tendency, early-life exposures, cohort-specific risk factors, and potential diagnostic or healthcare-related influences.

Keywords: childhood leukemia, incidence pattern, age-period-cohort

Tumour Stage And Geographical Survival Variation For Childhood Cancer - Benchista Project Phase 2

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Background/ Purpose: The BENCHISTA project encouraged population-based cancer registries (CRs) to collect staging data for childhood cancer (CC) according to the international Toronto Stage Guidelines (TG). In its first phase, we observed significant variation in stage distribution across different geographical areas. We also found that differences in 3-year overall survival (OS) could be partially attributed to variations in stage at diagnosis, underscoring the need for further analysis.

Methods / Approaches: 73 CRs from 27 countries, both within and outside Europe, participated in the first phase of the study. CRs collected TG data at diagnosis for six childhood solid tumours (0-19 years: osteosarcoma, Ewing sarcoma, rhabdomyosarcoma; 0-14 years: Wilms tumour, neuroblastoma, medulloblastoma) diagnosed between 2014-2017 with a minimum of three years of follow-up. In the second phase, we seek to improve data completeness, particularly, optional variables, extend the follow-up to 5 years, increase the number of participating CRs, and test the feasibility of aggregated data from CRs with international data sharing limitations. Several channels were explored to involve as many registers as possible.

Results: Approximately 20 new CRS have expressed interest in joining the second phase of the BENCHISTA project, significantly expanding its geographic coverage. This phase aims to deepen the investigation of survival disparities across regions by focusing on tumor-specific analyses. Key indicators such as non-stage prognostic factors, 5-year overall survival, and event-free survival will be examined to better understand the underlying causes of geographic variation in survival outcomes for solid CC.

Conclusion: BENCHISTA provided the first multinational, population-level comparison of CC survival by TG stage. Our results play a crucial role in healthcare organisation. Expanding participation in this collaborative project is essential for enhancing the understanding of CC survival variation. Continuous cooperation efforts between CRs and clinicians are key to support and develop standardised and sustainable use of TG.

Keywords: Childhood cancer, Toronto staging guidelines, Popoulation-based cancer registry, Geogrphical Survival variation, BENCHISTA

Histological Subtype-Specific Staging Patterns Of Lung Cancer In China: A Multi-Center Hospital-Based Study And Comparisons With The US

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Background/ Purpose: Understanding histological subtype-specific staging patterns is essential for optimizing lung cancer management. This study compares the distribution of tumor stages among adenocarcinoma (AD), squamous cell carcinoma (SCC), and small cell lung cancer (SCLC) between China and the United States (US).

Methods / Approaches: This multi-center hospital-based study included 12,698 stage I-IV lung cancer cases (AD, n=8,258; SCC, n=2,783; SCLC, n=1,657) diagnosed between 2016 and 2017 from 23 hospitals across six geographical regions in China and 55,283 cases (AD, n=32,390; SCC, n=14,373; SCLC, n=8,520) from the 2016-2017 SEER database in the US. We analyzed the prevalence of tumor stages between two countries and performed logistic regression analysis to identify factors associated with diagnosis at unresectable stages in Chinese dataset.

Results: Proportions of Chinese AD patients diagnosed at stage I-IV were 27.0%, 14.2%, 16.3%, and 42.6%, respectively. In contrast to AD, SCC showed peak frequencies at stage II (22.7%) and III (41.2%), while SCLC demonstrated high proportion of stage III (35.7%) and IV (51.3%). Compared to US data, Chinese patients had a higher proportion of resectable stage cases for AD (51.4% vs. US 42.9%, $p < 0.001$) and SCLC (10.1% vs. US 5.9%, $p < 0.001$). Additionally, proportion of stage IV cases were lower in Chinese AD (China 42.6% vs. US 52.6%), SCC (China 28.0% vs. US 34.5%), and SCLC (China 51.3% vs. US 69.2%) subgroups. Patients under China's New Rural Cooperative Medical Scheme (CNRCMS) had elevated risks of unresectable stage diagnosis across subtypes compared to urban-insured patients: AD (adjusted odds ratio, aOR=2.8, 95%CI=2.4-3.2), SCC (aOR=1.5, 95%CI=1.2-1.8), and SCLC (aOR=2.0, 95%CI=1.3-3.3), particularly in male AD subgroup (aOR=2.8, 95%CI=2.3-3.4).

Conclusion: Distinct histological subtype stage patterns emphasize the need for tailored diagnostic approaches. The elevated risk of advanced-stage diagnosis among patients enrolled in CNRCMS highlights systemic healthcare disparities, urging early detection and treatment access.

Keywords: lung cancer, histological subtype, staging pattern disparity, China, the United States

Evaluate the Efficacy of One-time Low-dose CT Screening for Lung Cancer in Hebei: Based on the population-based prospective study

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Background/ Purpose: This study aims to evaluate the effectiveness of one-time low-dose CT for lung cancer screening in areas with limited medical resources.

Methods / Approaches: This study was a multicenter, population-based, prospective cohort study in the North China. A total of 228265 eligible participants 40-74 year-old who had no cancer history were enrolled in the study from 2013 to 2019. Participants were evaluated as having high risk or low risk lung cancer via a risk score system. And participants who were assessed as high risk were invited for one-time LDCT scan for lung cancer screening. The effectiveness of one-time LDCT was evaluated by comparing lung cancer incidence, mortality, and all-cause mortality between the screened and non-screened groups from the time of cohort entry until January 18, 2023.

Results: In 228265 eligible participants, 54754 were classified into high risk group. There were 28864 participants who underwent LDCT scan (screened group) accounting for 57.72% of the high risk group and 25890 did not (non-screened group). During a median follow-up of 5.73 years, 1215 patients were newly diagnosed with lung cancer. And the proportion of early stage (stage 0 or stage I) of lung cancer accounted for 70.19% in screened group and 45.10% in non-screened group. Using weighted Cox regression after inverse probability weighting, the screened group had a 66.1% higher lung cancer incidence density, 36.3% lower lung cancer mortality density and 35.3% lower all-cause death density than those in non-screened group.

Conclusion: One-time LDCT screening was verified to be effective in reducing the burden of lung cancer in China, significantly decreasing lung cancer mortality and all-cause mortality and improving the proportion of early diagnosis. Our study provides a database for the prevention and control of lung cancer, particularly in regions with limited medical resources.

Keywords: lung cancer screening; LDCT; incidence; mortality; all-cause death

Regional Disparities In Cervical Cancer Incidence In India: Insights From Cı5 Volume Xıı (2013–2017).

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Background/ Purpose: Cervical cancer is a predominant source of cancer-related morbidity among women in India, exhibiting significant regional variations in incidence. This research employs data from the Cancer Incidence in Five Continents (CI5) Volume XII to analyze spatial disparities and identify areas with heightened risk.

Methods / Approaches: Age-standardized incidence rates (ASIRs per 100,000 women) were computed utilizing data from 22 Indian Population-Based Cancer Registries (PBCRs) featured in CI5 Volume XII (2013-2017). The registers have been organized into five geographic groups, omitting the East due to a lack of registry data. A comparison analysis was conducted to assess regional differences and pinpoint regions with markedly high or low cervical cancer incidence.

Results: The highest age-standardized incidence rate of cervical cancer was observed in Mizoram (ASIR: 23.0), followed by Tamil Nadu (18.1) and Kamrup-urban district (14.9). The lowest incidence rates were seen in Dibrugarh (4.6), Manipur (6.5), and Trivandrum (6.6). Southern India demonstrated the largest burden regionally (ASIR:17.1), whereas Western India recorded the lowest (8.6). The Central (10.3), Northern (12.0), and Northeastern (9.4) regions exhibited moderate incidence rates. Urban cancer registries, like Mumbai (ASIR:7.9) and Ahmadabad (6.8), exhibited relatively lower rates, potentially attributable to enhanced access to screening and healthcare facilities. An age-based study demonstrated a decreasing trend in incidence with advancing age; the greatest rates were observed in the 45–49 age-group, followed by a steady decline, culminating in the lowest rates among women aged 70 years and beyond.

Conclusion: The incidence of cervical cancer in India varies by geography and age, with higher rates in the South and Northeast, while lower rates are observed in the West and metropolitan areas. To alleviate the national cervical cancer burden, initiatives should concentrate on enhancing healthcare access, upgrading healthcare infrastructure, broadening screening programs, and strengthening governmental policies, especially in rural and high-risk areas.

Keywords: Cervical cancer, CI5, India, incidence disparities, HPV prevention.

Remnant Cholesterol, C-Reactive Protein, and Lung Cancer Risk Among Women in Cancer Registry Populations

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Background/ Purpose: Previous studies have indicated the importance of blood lipids in lung cancer. However, evidence of the association between remnant cholesterol (RC) and lung cancer remains scarce. This study aimed to investigate the association of RC with lung cancer morbidity and mortality, and evaluate its joint effects with C-reactive protein (CRP) among women.

Methods / Approaches: This prospective cohort study included 198,154 women initially without cancer from UK Biobank. Lung cancer diagnoses and deaths were ascertained through linkage with national cancer registry data. RC was calculated as non-high-density lipoprotein cholesterol minus measured low-density lipoprotein cholesterol. Cox models were adopted to estimate hazard ratios (HRs) and 95% confidence intervals (CIs) for incident lung cancer.

Results: During a median follow-up of 11.80-13.90 years, 1552 lung cancer cases and 1074 related deaths were identified. RC was positively associated with lung cancer morbidity and mortality in a linear manner, with respective HRs (95% CIs) of 1.50 (1.23-1.82) and 1.40 (1.11-1.77) in quartile 4. Compared with low RC/low CRP, the lung cancer risk increased by 115% for morbidity and 102% for death in the high RC/high CRP group. The cumulative risks by age of 80 of lung cancer in high RC/high CRP were higher than those in low RC/low CRP (morbidity: 3.64% vs 1.56%; mortality: 1.97% vs 0.82%).

Conclusion: This study found linear and positive associations of RC with lung cancer morbidity and mortality among women. Combined high RC and CRP conferred the highest relative and absolute risks. Our findings suggest the potential of integrating metabolic-inflammatory data into cancer registries to: (1) refine high-risk population selection for screening, and (2) enhance early prevention strategies. These results provide a scientific basis for advancing policy efforts to expand and enrich cancer registry data for more precise cancer prevention.

Keywords: Remnant cholesterol, C-reactive protein, Lung cancer, Cancer Registry, Prospective cohort study

Stage-Stratified Treatment Patterns Across Pathological Subtypes Of Lung Cancer In China: A Multi-Center Hospital-Based Study

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Background/ Purpose: Subtype-specific treatments are standard in lung cancer clinical management, but their real-world application across major pathological subtypes, adenocarcinoma (AD), squamous cell carcinoma (SCC), and small cell lung cancer (SCLC), remains unclear. This multi-center hospital-based study evaluates China's lung cancer therapeutic landscape through comprehensive analysis of clinicopathological and stage-stratified treatment patterns.

Methods / Approaches: This retrospective analysis included 12,698 stage I-IV lung cancer cases (AD, n=8,258; SCC, n=2,783; SCLC, n=1,657) diagnosed between 2016-2017 from 23 hospitals across six geographical regions. Treatment modalities (surgery, chemotherapy, radiotherapy, and targeted therapy) were compared across pathological subtypes and resectability stages, with additional stratification by gender, urban/rural residence, and hospital tier (Grade A tertiary/Others). Inter-subtype treatment differences were analyzed using χ^2 tests.

Results: Resectability rates and surgery rates in resectable subgroups demonstrated significant pathological subtype variations: AD showed 51.8% resectability with high surgical implementation (88.7%), whereas SCC exhibited the highest resectability (55.7%) but moderate surgical rate (59.6%). SCLC ranked lowest both in resectability (10.1%) and surgical rate (42.4%). Notably, chemotherapy predominated in SCLC (83.7%) compared to SCC (62.2%) and AD (39.7%). Radiotherapy utilization remained low across all subtypes, though relatively higher in SCC (20.6%) and SCLC (24.2%) than AD (8.9%). Targeted therapy adoption correlated with EGFR mutation prevalence (AD: 53.8%; SCC: 10.7%; SCLC: 14.3%), with 56.8% of mutation-positive unresectable AD patients receiving targeted therapy, significantly higher than SCC (30.8%) and SCLC (36.4%) ($p=0.028$). Significant demographic disparities emerged across all subtypes, particularly in resectable AD surgical rates: gender (Female: 92.4% vs Male: 84.1%, $p < 0.001$), residence (Urban: 89.3% vs Rural: 85.9%, $p=0.015$), and hospital tier (Grade A tertiary: 89.1% vs Others: 71.7%, $p < 0.001$).

Conclusion: This study reveals significant disparities in stage-stratified treatment patterns among lung cancer subtypes in China, highlighting the urgent need for improved early detection of SCLC and emphasizing the critical importance of guideline-driven, subtype-specific therapeutic strategies.

Keywords: lung cancer, pathological subtype, stage-stratified treatment, treatment pattern disparity, multi-center hospital-based study

Adapting to Regulatory and Technical Change: Collaboration and Training for Cancer Data Quality at GPCR

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Background/ Purpose: The Greater Poland Cancer Registry (GPCR) has long collaborated with data providers to ensure high-quality and complete cancer data. Before regulatory changes, physicians submitted notification forms in paper or electronic formats. The Registry supported this process through annual reminder letters, designated hospital contacts for case clarification, and regular training sessions on coding principles. An additional quality measure included annual verification of hospitalized patient lists against the Registry database to identify missing cases. Following integration of hospital information systems (HISs) with the national eKRN+ platform, GPCR staff assumed responsibility for reviewing electronic medical records and coding reportable cases. This study presents how cooperation and training practices evolved before and after these regulatory and technical changes and evaluates their impact on cancer data collection.

Methods / Approaches: This analysis is based on the GPCR's internal experience from years of collaboration with data providers. Observations included work organization, hospital communication, educational, and verification activities before and after data transfer changes. Described practices include reminder letters, hospital contact persons, training, and verification of hospitalized patient lists.

Results: Long-term collaboration and education fostered strong relationships between the Registry and data providers. Despite the automation of cancer data transmission, GPCR will continue sending periodic reminders—summarising the HIS-EKRN+ integration process. In selected facilities, it will also conduct targeted validation of submitted records to assess their completeness. GPCR will maintain close cooperation with staff appointed by each medical facility to help clarify and complete cancer case data. After system integration, the Registry maintained collaboration, expanding educational efforts to include documentation of key data elements in medical records.

Conclusion: Regulatory and technical changes did not reduce collaboration quality. Ongoing education, selective verification, and communication remain essential to maintaining high-quality cancer data within a changing legal and technological environment.

Keywords: Cancer registry, Data providers, Regulatory changes, Collaboration, Training

Forecast and Its Realisation Based on Lung Cancer Mortality in Poland: Implications for Health Policy

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Background/ Purpose: Forecasting the future has evolved significantly over time—from shamans in the Americas and Africa, to the Pythia in ancient Greece, and astrologers in the Middle Ages. Today, advanced statistical methods are employed to predict future phenomena.

Methods / Approaches: This analysis used mortality data from Statistics Poland. The projection was based on lung cancer deaths among individuals aged 35 and over, as lung cancers occurring before age 35 are not typically associated with smoking. For the forecast, which we based on data from the years 1999–2009, we used the model proposed by Dyba. The realisation of the forecast (actual data) has been presented up to the year 2022.

Results: The forecast for males overestimated the actual values by approximately 35%. In the case of females, the forecast demonstrated a high degree of concordance with empirical data through 2019. The COVID-19 pandemic introduced a disruption to previously established mortality patterns, which may account for the abrupt change in the trend of lung cancer mortality among women

Conclusion: The observed discrepancy between the actual and forecasted lung cancer mortality rates among men can be attributed to a more rapid decline in smoking prevalence than that observed during the period on which the forecast was based. In contrast, among women, the absence of significant changes in smoking behavior led to an almost perfect alignment between forecasted and actual mortality rates up until the onset of the COVID-19 pandemic, which markedly disrupted cancer incidence and mortality trends in Poland.

Keywords: Forecast, lung cancer

Exploring Gender Disparities In Global Cancer Incidence And Mortality And The Role Of National Development Level

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Background/ Purpose: Cancer is a global health issue with reported gender disparities in incidence and mortality. These differences are influenced by socioeconomic factors, including the Human Development Index (HDI). In this study we analysed global cancer trends, examined gender disparities, and explored how HDI impacts these differences, providing insights to support targeted interventions.

Methods / Approaches: Cancer incidence and mortality data (2012-2017) were obtained from the International Agency for Research on Cancer (IARC), covering 43 countries for incidence and 60 for mortality. Cancers were categorized into 12 non-gender-specific groups. Age-standardized incidence (ASIR) and mortality rates (ASMR) were calculated, with gender disparities analysed using men-to-women ratios (MWRs). Linear regression was used to assess the association between HDI and MWRs across cancer types.

Results: Colorectal and lung cancers had the highest incidence and mortality rates as compared to other cancers, with ASIR for colorectal cancer between 5.6 and 50.2 and ASMR between 2.7 and 31.5, and ASIR For lung cancer between 3.5 and 91.1 and ASMR between 3.0 and 65.0. Men generally experience higher rates than women, especially for colorectal, head and neck, and lung cancers, with incidence MWRs ranging from 0.9 up to 11.3 and mortality MWRs ranging from 0.9 up to 15.1. Thyroid cancers were more common in women, with incidence MWRs between 0.2 and 0.4. Higher HDI is associated with higher mortality MWRs for brain and CNS and thyroid cancers and lower MWRs for lung cancer.

Conclusion: These findings emphasize the need to explore other macro and micro determinants to reduce gender disparities in cancer incidence and mortality.

Keywords: Cancer Disparities, Gender, Human Development Index, Incidence, Mortality

Critical Medicines Utilization; Cancer Registry-Based Insights To Guide Policy And Investments In A Changing World

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Background/ Purpose: The current geopolitical situation raises important questions on the resilience of cancer care, particularly on continued availability of systemic therapies. The European Medicines Agency (EMA) lists critical medicines in order to prioritize actions preventing shortages. Population-based cancer registries may be utilized to inform policy makers on the actual use of medicines, to further guide policy and investments facilitating medicines' availability. We aimed to provide recent insights into the use of systemic therapies in primary cancer treatment in the Netherlands.

Methods / Approaches: Systemic therapies administered in primary cancer treatment in 2022-2024 were listed using Netherlands Cancer Registry (NCR) data. Numbers of patients receiving these medicines were counted, both overall and stratified by cancer type and age groups.

Results: Fifteen of the 30 most frequently administered medicines regarded chemotherapies, while 7 regarded hormonal therapies, 6 immune/targeted therapies, and 2 other medicines. Eleven of these top-30 medicines – 10 chemotherapies and tamoxifen – were listed on EMA's most recent publicly available critical medicine list (2025/02). Carboplatin, paclitaxel, and cyclophosphamide were most commonly administered, to 22,883 patients (7% of all diagnosed in 2022-2024), 18,978 patients (6%), and 14,695 patients (5%), respectively. These medicines are on the EMA list and administered in many different cancer types including invasive breast cancer – which incidence is expected to rise in the future in the Netherlands. Patients under 18 most often had Vincristine administered – frequently (44%) for Hodgkin's lymphoma.

Conclusion: We provided insights into the most common systemic therapies in current primary cancer care. These insights can be related to EMA's critical medicine list to further guide policy makers setting priorities. Unlike generic pharmacy databases, cancer registries provide the ability to stratify to cancer types – including emerging types. An open source package utilizing the OMOP Common Data Model will be published, allowing other cancer registries to provide similar insights.

Keywords: Medication shortages, Critical medicines, Systemic therapies

Colorectal Cancer Incidence And Trends In The Provence Of Bejaıa, Algeria, 2009-2023.

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Background/ Purpose: The incidence of colorectal cancer (CRC) has increased dramatically in Algeria over the past several years. We estimated CRC incidence and annual percent change (APC) in the province of Bejaia, over the period 2009-2023.

Methods / Approaches: We used the Bejaia population-based cancer registry to estimate CRC standardized incidence rates (SIR) with the direct method, expressed per 100 000, and APCs, for colon and rectal cancers separately.

Results: Between 2009 and 2023, 1 911 new CRC cases were recorded, of which 772 (60,7%) were located in the colon. SIR was 8,6 for colon cancer and 5,7 for rectal cancer. SIRs significantly increased over the study period (0,1 to 9,5 for colon cancer (APC: +8,9%; $p < 0,05$), and 0,1 to 9,6 for rectal cancer (APC: +10,8%; $p < 0,05$)). The most marked increases were observed in individuals aged ≥ 50 years (0,1 to 40,0 for colon cancer (APC: +10,4%; $p < 0,05$) and 0,3 to 38,7 for rectal cancer (APC: +11,7%, $p < 0,05$)). Stage III and IV accounted for 60,0% of cancers of the colon, and 68,2% of those of the rectum, with SIR of 18,1 and 14,7 (APC: +10,5% and +8,6%) for colon cancer, and 12,8 and 12,3 (APC: +16,7% and +7,9%) for rectal cancer. Synchronous metastases were diagnosed in 198 (17,3%) patients with colon cancer (SIR: 14,7), and 164 (21,6%) patients with rectal cancer (SIR 12,4). The most frequent metastatic sites were the liver (79,8%), and lungs (26,8%) for colon cancer (SIR: 11,9 and 3,9), and the liver and lungs (68,5%, SIR: 8,6 and 34,5%, SIR: 4,3) for rectal cancer.

Conclusion: Over nearly two decades, the province of Bejaia has experienced an upward trend in CRC incidence rates. The late stage at CRC diagnosis highlights the urgent need to set up screening programme.is experiencing a notable upward trend

Keywords: Colorectal cancer, incidence, trends, Annual Percent Change

Prostate Cancer Disparities According To D'amico Risk Groups, Accordind To Chlordecone Soil Contamination In Martinique

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Background/ Purpose: Morbidity and mortality data show that prostate cancer is a major public health problem in the Caribbean. Recent works have highlighted correlations between exposure to Chlordecone and geographical distribution of cancer cases in Martinique. We aim to describe the distribution of incident cases and deaths of prostate cancer according to d'Amico risk groups, combined with data on Chlordecone soil contamination.

Methods / Approaches: We included socio-demographic data and clinical variables from all patients diagnosed with Prostate cancer (ICD10 : C61) between 2010 and 2019. The French guidelines recommend the use of the D'Amico risk group classification. Comparisons between incident cases or number of deaths according to Amico risk level and chlordecone soil contamination levels were made using parametric tests combined with chloropethe mapping.

Results: 5,868 new cases were diagnosed in Martinique between 2010 and 2019. Most of the cases were located in the low-exposure area (40.5%) and the moderate-exposure area (33.4%). Three main associations were found between incident cases and exposure zone: (1) low-risk cases increased significantly by 1.32 in the low-exposure area, (2) intermediate-risk cases decreased significantly by 15% in the high-exposure area and (3) regional/metastatic cases decreased significantly by 25% in the moderate exposure. Roughly half of all deaths (47.10%) were located in the non-exposed area and significantly reduced by 24% in highly contaminated areas compared with non-exposed areas.

Conclusion: Integrating the latest available data on soil contamination and cancer incidence will extend on-going knowledge of chlordecone exposure and Prostate cancer incidence, which remains a major environmental concern in Martinique. Pooling expertise and consolidating all pre-

existing information on prostate cancer epidemiology at a single level is the solution for: (i) data visualization, (ii) the production of relevant indicators and (iii) risk modeling.

Keywords: Caribbean Region, Prostatic Neoplasms, Environmental Pollution

Trends in Bladder, Kidney, and Prostate Cancer in Albania Based on Cancer Registry Data (2015–2022)

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Background/ Purpose: Bladder, kidney, and prostate cancers represent significant components of the cancer burden globally, with incidence patterns varying by region. In Albania, systematic cancer data collection is conducted via the national cancer registry maintained by the Institute of Public Health, drawing on reports from both public and private healthcare institutions.

Methods / Approaches: This study analyzes trends from 2015 to 2022 using verified cases from hospital records, including the Mother Teresa University Hospital Center, with efforts to eliminate duplicate reporting. Mortality data are drawn from INSTAT and presented as crude and age-standardized rates.

Results: In 2022, the incidence of bladder cancer in Albania was 15.7 per 100,000 inhabitants, with a strong male predominance (male-to-female ratio 4:1) and 90% of cases occurring in individuals over 55 years old. Bladder cancer accounted for 1.4% of all cancer-related deaths, with smoking identified as a major risk factor (50–60% of cases). Prostate cancer incidence reached 15.6 per 100,000 men—approximately double the incidence recorded in 2015—and contributed to 6.1% of cancer mortality. Kidney cancer had an incidence of 4.8 per 100,000, affected men twice as often as women, and had an average age of death of 68.5 years.

Conclusion: These three genitourinary cancers show varying but concerning trends in Albania, particularly the rising incidence of prostate cancer. Male gender, older age, and modifiable lifestyle factors such as smoking and occupational exposures are key determinants. Public health strategies focused on prevention, early detection, and improved cancer care infrastructure are urgently needed to address the growing burden of these malignancies.

Keywords: Cancer trends, cancer registry, public health, epidemiology

Cancer Screening RADAR – Mapping Cervical Cancer Screening In Migrants: A Proof Of Concept From Italy

(3rd Prize, IACR 2025 Poster Awards)

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Background/ Purpose: The lack of systematically collected comparable health data among migrants remains a critical barrier when implementing the WHO Action Plan for Refugee and Migrant Health. In Italy, about 9% of the population has a migration background, and migrant attendance to cancer screening programs is often lower when compared to the host population.Cancer Screening RADAR explores the feasibility and methodology to fill this gap by mapping the attendance of cancer screening programs among individuals with a migration background across Europe

Methods / Approaches: Cancer Screening RADAR explores the feasibility and methodology to fill this gap by mapping the attendance of cancer screening programs among individuals with a migration background across Europe. Using data from the Turin population-based cancer registry and the screening program from 2013 to 2017, we estimated the Standardized Ratios (SRs) of Screening Attendance, CIN2/3, invasive cervical cancer incidence, and Mortality rates

Results: Migrant women had lower screening attendance ($SR < 1$), slightly elevated levels of pre-cancerous lesions ($SIR \approx 1$), and a significantly higher rates of invasive cervical cancer ($SIR > 1$, statistically significant). Mortality SIRs for migrant women were also significantly higher when compared to the host population, yet they were overall lower than SIRs for invasive cancers. Geographical region of origin and Cervical cancer incidence rates in the country of origin are two key factors influencing SIR variation among migrant populations

Conclusion: The results show that migrant women from countries with high cervical cancer incidence often have suboptimal screening participation, this is associated with significantly elevated risks of invasive cervical cancer. These findings underscore the need to expand this study to other settings with screening programs to understand whether these patterns also hold in other regions. A better understanding of these disparities will allow development of targeted interventions to improve screening coverage and early detection among high-risk migrant groups

Keywords: Migrants, Cervical Cancer, Screening, risk group

Disparities In Liver Cancer Treatment Patterns And Outcomes By Hospital Tier In China: A Multicentre Cohort Study

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Background/ Purpose: China's three-tier hospital system aims to optimise healthcare delivery according to institutional capacity, yet its implication for cancer treatment remains unclear. This study assessed liver cancer treatment patterns and survival outcomes across hospital tiers to evaluate equity and effectiveness in care delivery.

Methods / Approaches: We conducted a retrospective cohort study including 4,951 liver cancer patients diagnosed between 2016 and 2017 at 12 hospitals in China (grade A tertiary, n=3,642; non-grade A tertiary, n=1,309), covering provinces with different socioeconomic statuses. Treatment modalities, including surgery, interventional therapy, and chemotherapy, were compared by tumour stage and hospital level. Stage-specific treatment differences were analysed using chi-square tests. To specifically assess the impact of hospital tiers on patients' survival outcomes, we used multivariable Cox models, adjusting for demographics, insurance status, and tumour stage at diagnosis.

Results: Grade A tertiary hospitals demonstrated significantly higher rates of surgical treatment, particularly in patients with stage III and IV disease (stage III: 44.8% vs 7.6%, $P < 0.001$; stage IV: 20.4% vs 6.7%, $P=0.001$). In contrast, interventional therapies were more frequently employed in non-grade A tertiary hospitals (stage I: 64.1% vs 25.2%, $P < 0.001$; stage II: 46.9% vs 20.6%, $P < 0.001$). Chemotherapy use was also lower in non-grade A hospitals (stage III: 3.1% vs 14.4%, $P=0.001$). Use of targeted therapies remained low across all tiers. Multivariable analysis showed

hospital tier was not independently associated with overall survival (adjusted HR: 0.93[0.82-1.06]).

Conclusion: Marked differences exist in liver cancer treatment practices across hospital tiers in China, driven by disparities in access to surgery and systemic therapies. However, hospital tier alone does not independently predict survival outcomes, which are more strongly influenced by clinical factors, including tumour stage and treatment modality. Strengthening capacity and standardizing care across hospital levels may improve equity in cancer care delivery.

Keywords: Liver cancer, Three-tier hospital system, Treatment patterns, Tumour Stage, Healthcare equity

Changing Patterns Of Clinicopathologic Features Of Colorectal Cancer In The Province Of Bejaia, Algeria, 2004-2023.

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Background/ Purpose: Colorectal cancer (CRC) is a major public health concern in Algeria, however, little is known about its clinical and pathological characteristics. We carried out an analysis to describe the clinical and pathological profile of CRC patients, diagnosed in the province of Bejaia, Algeria, over a 20-year period.

Methods / Approaches: The information on histologically proven CRC patients was collected retrospectively from medical records and pathology reports. We described the clinical and pathological characteristics of cancers of the colon and the rectum.

Results: Between 2004 and 2023, 1 272 new CRC cases were diagnosed, among which 772 (60,7%) were located in the colon. The male-to-female sex-ratio was 1,36:1 for colon cancer and 1,54:1 for rectal cancer. The mean age at diagnosis was 60,1±14,0 for colon cancer and 61,1±14,1 for rectal cancer. The first symptoms were dominated, for colon cancers, by abdominal pain (29,2%), transit disorders (19,9%) and rectal bleeding (19,4%), and for rectal cancers by rectal bleeding (50,6%), transit disorders (26,8%) and abdominal pain (26,4%). About 33% of colon cancers and 17,0% of rectal cancers were diagnosed following emergency surgery, dominated by acute intestinal obstruction (28,2% and 14,8%). Ulcerating, infiltrating and stenosing features accounted for 64,2% and 73,1%, 50,9% and 44,2%, 50,3% and 42,2%. Vascular embolism and perineural neoplastic invasion were observed in 17,8% and 9,8%, and 12,0% and 8,0% of cases respectively. Stage III and IV accounted for 60% of colon cancers and 68,2% of rectal cancers. Metastases were present in 31,7% of colon cancers and 39,1% of rectal cancers, with liver (22,0% and 23,0%) and lung (7,1% and 11,8%) being the most frequent sites.

Conclusion: Our study highlights the importance of implementing systematic and population-based CRC screening programs for effective prevention. These programs are crucial for early detection, reducing CRC mortality, and improving treatment outcomes.

Keywords: Colorectal cancer, demographic characteristics, clinical, stage, metastases.

Age-Related Survival Disparities in Ovarian Cancer in China, 2010–2021: Trends and Underlying Causes

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Background/ Purpose: As the global population ages and lifestyle factors evolve, the burden of ovarian cancer has increased. Understanding the survival disparities by age among ovarian cancer patients is critical for designing targeted interventions to improve outcomes and address health inequities.

Methods / Approaches: We analyzed data from the national cancer registry program covering 281 registries in 31 provinces of China in 2010-2021, which included 77953 females diagnosed with ovarian cancer. We calculated 5-year relative survival by age using the Ederer II method and its trend in different periods. We used a high-resolution cohort data comprising 27 hospitals across 12 provinces to explore the underlying causes of age-related survival disparities, which included 1631 females diagnosed with ovarian cancer between 2016 and 2017, with follow-up data until 2023. We used multivariable logistic regression and Cox proportional hazards models to assess differences in stage at diagnosis, treatment, and overall survival by age groups.

Results: The age-standardized 5-year relative survival rate in ovarian cancer patients in 2019-2021 was 39.6% (38.9,40.3) overall, 59.5% (58.9,60.2) for patients aged under 60, and 32.4% (31.6,33.2) for those aged 60 and older. From 2010 to 2021 five-year survival had a slight increase for patients aged under 60, while no increase for those aged 60 and older. Older patients(age≥60) were more likely to present with advanced-stage disease compared to the younger group (OR 1.63 [1.22–2.19]). They were also less likely to undergo surgery (OR 3.04 [2.14–4.32]) or chemotherapy (OR 1.63 [1.25–2.13]) and had worse overall survival (HR 1.25 [1.06–1.47]) .

Conclusion: Older ovarian cancer patients have persistently experienced adverse survival outcomes over the past decade. The underlying causes partly originated from significant disparities in stage at diagnosis and treatment schemes compared to the younger population.

Keywords: Ovarian Cancer, Survival Disparities, Age, China

Survival For Colon Adenocarcinoma In A Hospital-Based Cancer Registry In Cali, Colombia

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Background/ Purpose: Survival estimations for colon adenocarcinoma (CA) have changed in recent decades due to screening strategies and advances in treatment. This study describes the overall survival for CA using a hospital-based cancer registry database.

Methods / Approaches: A retrospective cohort study was conducted at Fundación Valle del Lili (FVL) between 2015-2022. All CA types were included, while patients under 18 years of age, those with multiple primary tumors, or in situ clinical stage were excluded. Data were obtained directly from the hospital-based cancer registry. All cases were staged using the AJCC 8th edition. The Kaplan-Meier method was used to estimate survival curves. Cox proportional hazards model identified risk factors with adjusted hazard ratios (HR) with 95% confidence intervals.

Results: A total of 1,744 patients were identified, of whom 1,643 met the eligibility criteria (237 cases were excluded). The median age was 64 years (IQR: 54–73 years), and 55.1% were female. A 90.1% were treated in the private health insurance system, while 9.9% were treated in the public health insurance system. Clinical staging showed that 11.3% of cases were localized, 55.5% were locally advanced, 20.5% were metastatic, and 12.7% had an unknown stage. Tumor location was predominantly in the left colon (54.7%) compared with the right colon (38.5%), while 6.9% did not have a specific location. The liver was the most common site of metastasis (10.5%). The five-year observed survival was 65.6% (95% CI: 62.8–68.2), regardless of sex, health insurance system, or tumor location. The risk of death was associated with clinical stage—locally advanced (HR: 1.56, 95% CI: 1.05–2.37) or metastatic (HR: 11.18, 95% CI: 7.44–16.80)—and age ≥70 years (HR: 2.36, 95% CI: 1.80–3.08).

Conclusion: Patients with CA are often diagnosed at advanced clinical stages, emphasizing the need to implement screening programs to detect the disease at earlier stages in our context.

Keywords: colon adenocarcinoma, survival analysis, hospital-based cancer registry, clinical stage

Trends In Incidences Of Childhood Malignant Neoplasms In The Russian Federation (2013-2023)

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Background/ Purpose: Timely diagnosis of childhood malignant neoplasms (MN) and their high-quality registration are necessary to identify trends in morbidity and determine optimal approaches to the organization of medical care in the Russian Federation.

Methods / Approaches: Data on newly identified MN in the period 2013-2023 for the age groups 0-4, 5-9, 10-14 and 15-17, by location and by gender, were analyzed. Transformation using the least squares method was performed to exclude deviant cases.

Results: During the period, incidence rates demonstrated a wave-like trend with minimum values in 2021, rate among boys being 4.4-17.8% higher for females. The highest incidences were registered in the 0-4 year age group (166.2–179.7 per 1 million population) with decrease in 2016-2023, a distant consequence of loss of population during World War II. Dynamics of rough indicators of the incidence of MN in children (0-17 years old) is characterized by a slight decrease (by 0.53%), while at the age of 5-9 years the most pronounced decrease in the indicator is recorded (by 1.19%), and among children aged 10-14, and especially at 15-17 years, an increase in the indicator is noted. Other changes appear to be ongoing, with increase in the incidence of leukemia noted in the 0-4, 10-14, and 15-17 year groups, and lymphomas only in the 15-17 year group. The incidence rates of MN of the meninges, brain and other parts of the central nervous system, as well as bones and articular cartilage, are demonstrating significant decrease, in all age groups. Incidences of thyroid MN in the 10-14 and 15-17 year age groups have recently doubled.

Conclusion: Particular changes evident in the morbidity rates of children with MN impact on the planning of the healthcare system of the Russian Federation regarding diagnosis, treatment requirements and specialist training.

Keywords: epidemiology, registration cancer, childhood cancer, cancer care, incidence rate

Global Female Breast Cancer Burden: Epidemiological Analysis And Outlook Based On GBD And SEER Data

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Background/ Purpose: Breast cancer remains the leading cause of cancer-related deaths among women worldwide and in the United States. Understanding global and regional differences in disease burden is crucial for developing targeted prevention and control strategies. This study aims to analyze the epidemiological trends and attributable risk factors of female breast cancer by comparing global and U.S. data.

Methods / Approaches: We conducted a comprehensive epidemiological analysis using data from the Global Burden of Disease (GBD 1990–2021) and the Surveillance, Epidemiology, and End Results (SEER) Program. Age-standardized incidence rate (ASIR), age-standardized mortality rate (ASMR), and age-standardized disability-adjusted life years (DALY_ASR) were assessed. Seven modifiable risk factors were quantified through stratified analysis. Joinpoint regression was used to calculate the annual percentage change (APC) and average annual percentage change (AAPC). Temporal patterns, cohort effects, and population dynamics were evaluated using the Age-Period-Cohort (APC) model. The Bayesian APC (BAPC) model was applied to predict the global incidence trend of breast cancer in females through 2053.

Results: Research shows that the global age adjusted incidence rate of cancer among women is rising, while it has declined in the United States, but has recently risen. In terms of risk factors, Behavioral risks dominate DALYs contributions. The comparison results of the two databases show that the incidence trend of female breast cancer in the 40-50 and 75-79 age groups is the same globally as that in the United States. The Bayesian age-period-cohort prediction model predicts that the global ASIR will continue to maintain an upward trajectory.

Conclusion: The global burden of female breast cancer is increasing, highlighting the urgent need for region-specific and age-targeted preventive strategies. This study, integrating GBD and SEER data with advanced predictive modeling, provides novel insights and a scientific basis for policy-making and resource allocation in breast cancer control worldwide.

Keywords: Breast Cancer, Global Burden of Disease, ASR, EAPC, DALY

Sex-Specific Age–Period–Cohort Patterns in Stomach Cancer Incidence in İzmir, Türkiye (1998–2017)

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Background/ Purpose: Age–period–cohort (APC) models clarify temporal patterns in cancer incidence. This study assessed stomach cancer trends in İzmir residents aged ≥30 years between 1998 and 2017.

Methods / Approaches: We applied APC modeling to data from the İzmir Population-Based Cancer Registry, stratified by sex. Cases and person-years were classified into 5-year age groups (30–34…85–89) and calendar periods (1998–2002…2013–2017). Using the NCI APC Web Tool, we estimated net drift (average annual percent change), longitudinal age curves, period and cohort rate ratios (RRs), age/period deviations, and local drifts (age-specific annual changes).

Results: Among men, net drift was +0.32%/year (95% CI –0.27 to +0.90; p=0.29). Incidence increased with age (~5 to ~130 per 100 000 from ages 32.5 to 77.5), and period effects were non-significant (p=0.21). Cohort RRs peaked in those born 1933–1943 (RR=1.07), then declined to 0.70 in the 1983 cohort (p=0.03). Local drifts showed declines in younger men (–2.8%/year at age 32.5) versus increases among those ≥ 80 years (+3.4%/yr). Among women, net drift was +0.55%/year (95% CI –0.17 to +1.27; p=0.13). Period RRs peaked in 2005 and fell by 2017 (p=0.009), while cohort effects were not significant (p=0.40). Local drifts peaked in the youngest women (+3.2%/year at age 32.5) with minimal change at older ages.

Conclusion: Stomach cancer in İzmir exhibits sex-specific age–period–cohort patterns, with men experiencing declining cohort risk in recent birth cohorts but increasing rates among the very old and women showing a mid-2000s period peak followed by emerging rises in younger cohorts. These findings underscore the need for surveillance and prevention strategies tailored to both age and sex.

Keywords: stomach cancer, age-period-cohort analysis, incidence pattern

Exploring Gendered Patterns of Cancer in Urban India Using Mumbai and Chennai Registries

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Background/ Purpose: Urban India is undergoing a cancer transition marked by shifting risk profiles and disease patterns. Traditional analysis methods often obscure the relative nature of cancer-type burdens. This study uses Compositional Data Analysis (CoDA) to investigate sex-based differences in the proportional burden of major cancer groups in Mumbai and Chennai.

Methods / Approaches: Annual cancer incidence data (1982–2012) for most frequent cancers from Mumbai and Chennai PBCR, stratified by sex, were used. Cancer-sites were grouped into infectious-origin, tobacco-related, and lifestyle-related(non-tobacco) categories. Proportions of each group were calculated and transformed using centered-log-ratio (clr) transformation to handle compositional nature of data. Compositional Data Analysis (CoDA) is critical in this research as it accounts for relative relationships between cancer types, avoiding misleading interpretations that can arise from analyzing raw proportions or counts independently. PCA was then applied to identify the dominant sources of variation and sex-specific differences in cancer composition over time.

Results: Men showed a high proportional dominance of tobacco-related cancers(65%), with limited contribution from infectious(18%) and lifestyle-related(17%) cancers. This pattern is driven primarily by high rates of oral, oesophageal, and lung cancers, reflecting widespread use of both smoked and smokeless forms of tobacco. In contrast, women exhibited a more balanced burden: 38%infectious-related, 22%tobacco-related, and 40%lifestyle-related cancers. Cervical cancer(infectious) remains a significant burden among women but is showing a consistent decline, while breast-cancer(lifestyle) is sharply increasing—indicating shift in female cancer profiles. Oral-cancer remains low in women. clr variation matrices revealed that tobacco-related cancers contributed most to compositional variability in men, whereas lifestyle-related cancers(such as breast-cancer) accounted for major shifts among women.

Conclusion: The cancer burden in urban India reveals sharp sex-based compositional differences, with male profiles dominated by tobacco-related cancers and female profiles indicating a transition from infectious (cervical) to lifestyle-related (breast) cancers. CoDA provides nuanced insights into these disparities and supports more tailored, sex-specific cancer control strategies.

Keywords: PBCR, Sex Difference, Cancer Pattern, Cancer Transition, Compositional Data

Estimating the Burden of Cancer Subtypes in Kinshasa, Democratic Republic of the Congo: A Comparative Analysis of Hospital Data and WHO Modeling Estimates

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Background/ Purpose: Non-communicable diseases (NCDs), including cancer, are major causes of mortality in the Democratic Republic of Congo (DRC), responsible for 48% of deaths in 2018. However, cancer prevalence data in the DRC are scarce, relying mainly on estimates from neighboring countries through modeling. The absence of a national cancer registry complicates accurate assessment of cancer burden.This study aimed to estimate the burden of cancer subtypes in Kinshasa, DRC, using real clinical data from HJ Hospitals and compare it to World Health Organization (WHO) modeling estimates.

Methods / Approaches: A retrospective observational study was conducted from 2018 to 2020 at HJ Hospitals, analyzing data from 6,852 patient samples. The American Cancer Society (ACS) questionnaire and physician logs were used for data collection, and descriptive analysis was performed using STATA version 16.

Results: The study revealed notable discrepancies between hospital data and WHO estimates. Breast cancer accounted for 33.6% of cancer cases in the hospital data, significantly higher than the WHO estimate of 14.9%. Prostate cancer (21.8%) was also more prevalent than the WHO estimate of 15.3%. Cervical cancer was underrepresented in hospital data (4.4%) compared to WHO's 15.9%. Additionally, colorectal cancer was more common in the clinical data (9.6%) than the WHO estimate of 5.9%.

Conclusion: The discrepancies suggest a need for a comprehensive cancer registry in DRC to improve cancer surveillance and management. Variations in cancer prevalence may be influenced by regional factors, healthcare access, and diagnostic practices. A robust registry would support cancer prevention, early detection, and better management strategies, enhancing cancer care in DRC.

Keywords: Cancer prevalence, Non-communicable diseases, Democratic Republic of Congo, Kinshasa

Disease Burden And Cause-Eliminated Life Expectancy Of Digestive System Cancers In Guangdong, China

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Background/ Purpose: To analyze the epidemiological characteristics and disease burden of digestive system cancer in Guangdong in 2019, and to provide evidence for prevention and treatment of digestive system cancers.

Methods / Approaches: Both incidence and mortality data used in calculations originated in the cancer registration system of Guangdong Province. Crude incidence rate, mortality rate, age-standardized incidence and mortality rate (ASIR and ASMR), 35-64-year-old truncated rate, 0-64-year-old cumulative rate, disability-adjusted life year (DALY), and cause-eliminated life expectancy were used to estimate the disease burden due to digestive system cancer. The life expectancy and the cause-eliminated life expectancy were calculated using an abridged life table method.

Results: In 2019, the crude incidence rates and crude mortality rates of digestive system cancers were 82.30/100,000 and 56.53/100,000 respectively in Guangdong Province. The ASIR and ASMR were 59.61/100,000 and 37.27/100,000, respectively. The total DALY and DALY rate of digestive system cancers were 1164,344 person-years and 10,010.82/100,000. After eliminating causes of death from digestive system cancers, the life expectancy increased from 84.10 years to 84.93 years in Guangdong Province. In the disease burden of digestive system cancers, the disease burden was higher in males than in females and higher in rural areas compared to urban areas. Among these, colorectal cancer has the highest incidence, liver cancer exhibits both the highest mortality and disease burden, and also has the most significant impact on life expectancy among residents in Guangdong Province.

Conclusion: Digestive system cancers exhibited a heavy disease burden in Guangdong Province. There were discernible gender and regional disparities in the incidence, mortality, and disease burden associated with five digestive system cancers. Liver cancer and colorectal cancer emerged as the predominant malignancies contributing to the disease burden in Guangdong Province. Guangdong Province should focus more on early screening and prevention of digestive system cancer in the future.

Keywords: Digestive system cancer, Epidemiology, Disease burden, Cause-eliminated life expectancy, Guangdong

Establishing A Population-Based Cancer Registry In The City Of Lubumbashi / Democratic Republic Of Congo

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Background/ Purpose: There is a growing burden of cancer worldwide, whereby low-and-mid income countries face a disproportional burden of cancer mortality. In the Democratic Republic of Congo (DRC) currently only limited cancer registration activities take place. We work to establish a population-based cancer registry in the city of Lubumbashi – the second largest city in the DRC – whereby a subsequent geographical extension of the cancer registry is intended.

Methods / Approaches: In December 2024 we started to set-up the cancer registry in Lubumbashi. Initially, we interviewed local healthcare professionals to inform cancer registration strategies. The strategies included information on the overall objective, structure and personal, quality control, and variables. This information was used to set up the registry, which started initial operation in January 2025.

Results: We established contacts with 15 hospitals and clinics throughout the city of Lubumbashi. Clinicians collaborate to collect data from patients which have a suspicion of cancer or a secured cancer diagnosis (Anatomopathology). The team of the School of Public Health from the University of Lubumbashi frequently visits the hospitals to collect the data forms and transfers the data to the program CanReg5. We are currently evaluating the performance of the data collection form and gathering feedback from the participating healthcare structures. Subsequently, we want to extend data collection to all hospitals in Lubumbashi and work closely with histopathological institutions to validate the information in the cancer register.

Conclusion: Establishing the population-based cancer registry in Lubumbashi aims to contribute to the overall goal of universal health coverage by informing decision-makers on the local cancer burden in the Democratic Republic of Congo. We are currently in the process to refine and expand cancer-registration activities, whereby we expect to be in full operation by the end of 2025. The information collected will inform local cancer-control activities and health policy planning in the DRC.

Keywords: Development, Democratic Republic of Congo, Lubumbashi, École de Santé Publique, Set-up

Population-Based Study Of 3-Year Survival And Conditional Survival Of Ovarian Cancer In Girona, Spain (2010-2021)

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Background/ Purpose: Ovarian cancer (OC) the worst prognosis tumor of the female gynecological system, as it is usually diagnosed in advanced stages. The aim of this study is to estimate the survival of OC.

Methods / Approaches: Primary malignant ovarian, fallopian tubes and peritoneal tumors diagnosed in the province of Girona, Spain (2010-2021) were included. Sociodemographic and clinical variables were collected. TNM stage at diagnosis was categorized as: localized (I and II), regional (III), distant (IV) and unknown. Patients were followed until 31/12/2023. Observed survival (OS) was estimated using Kaplan-Meier at 1 and 3-years, and conditional OS (COS): 3/1-year OS ratio.

Results: A total of 627 cases were included, median age at diagnosis of 66 years [IQR:54-71]. Epithelial tumors were the most common (83.1%), with high-grade serous being the most frequent (46,3%), followed by other epithelial (11.5%), endometroid (8.5%), clear cell (6.5%), other serous (6.2%) and mucinous (4.1%). Non-epithelial and nonspecific neoplasms accounted for 6.1% and 10.8%, respectively. Tumors were bilateral in 28.6% cases, unilateral in 45.0% (23.1% left, 21.9% right). The most frequent stage was regional (36.5%), followed by distant (30.1%). Patients were followed for a median of 2.7 years [IQR:0.8-5.5].Median OS was 3.4 years [95%CI:2.9-3.8] with a 3-year OS of 52.5% [95%CI:48.7-56.6] and a SOC of 71.7% [95%CI:67.3-75.7]. The OS decreased with age, with a range of 79.9% and 23.0% between < 50 and > 79 years. Endometroid, clear cell, mucinous, and non-epithelial tumors had the best prognoses (SOC > 80%); while serous, other epithelial, and nonspecific neoplasms had SOC < 70%. Bilateral tumors presented lower median OS (3.8 years) compared to unilateral (right: 5.7 years; left: 4.5 years). The greatest differences in OS were observed according to stage: 90.4% [95%CI:85.7-95.3] in localized and 26.5% [95%CI:20.9-33.7] in distant.

Conclusion: This study presents up-to-date population-based data of OC survival, showing differences according to the characteristics studied.

Keywords: ovarian cancer, stage at diagnosis, laterality, observed survival, conditional survival

Data-Driven Insights for the Right to Be Forgotten in Switzerland: A Population-Based Study on Cancer Survivors' Challenges

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Background/ Purpose: The Right to Be Forgotten (RTBF) protects cancer survivors from financial discrimination by allowing them to withhold their medical history after a remission period when applying for loans or insurance. While several European countries have adopted RTBF laws, Switzerland has not yet implemented such policies. Given the increasing number of cancer survivors and their financial challenges, data-driven insights are needed to inform policy discussions and assess RTBF's potential applicability. This study aims to establish a scientific basis for RTBF in Switzerland by assessing when cancer survivors' mortality risk aligns with that of the general population and identifying their financial difficulties.

Methods / Approaches: A retrospective cohort study using data from the Geneva Cancer Registry and the Swiss national cancer database (NICER) will estimate when cancer survivors reach mortality parity with the general population using cure models and conditional survival analysis. To investigate financial challenges, a scoping literature review will summarize existing evidence, qualitative data will be collected through patient associations, and a survey will compare financial access between cancer survivors and a control group.

Results: This study will provide an epidemiological foundation for RTBF in Switzerland by defining the timeframe at which cancer survivors no longer experience excess mortality. It will also map financial barriers, strengthening the evidence base for policy discussions.

Conclusion: The absence of RTBF in Switzerland may contribute to financial discrimination against cancer survivors. This study will provide key data to support equitable financial access, ensuring that survivors are not indefinitely penalized for their medical history.

Keywords: Survivorship, RTBF, excess mortality

Care Opportunities And Other Outcomes Of Cancer Patients Before And After The COVID-19 Pandemic In Cali, Colombia

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Background/ Purpose: The COVID-19 pandemic has significantly impacted oncology practice, prompting the need to investigate its effects on cancer diagnosis and treatment. The objective of this study was to examine the changes in cancer care before and during the pandemic in Cali-Colombia.

Methods / Approaches: This retrospective, hospital-based, observational study utilized administrative databases from a single hospital setting in Cali, Colombia called Fundación Valle del Lili (FVL). The study included patients aged ≥18 years diagnosed with breast, prostate, cervix, colon & rectum, and stomach cancers from 2018 to 2021. Cases with insufficient data in the database (date of diagnosis, date of last contact, tumor classification, and clinical stage) were excluded. Data was collected from the hospital's High-Cost Fund database, with the COVID-19 pandemic's official start date in Colombia marked as May 6, 2020. We estimated cancer risk management indicators for each localization.

Results: A total of 70,338 registries of patient records were analyzed, revealing a median age of 64 years (IQR=52-74 years) with 61% women, 92% affiliated to contributory system, 64% from Cali, 72% having histopathology study and 11% having palliative care evaluation. The most prevalent cancers differed between sexes: breast and thyroid cancer in women; prostate and skin cancer in men. Notably, there was a slow increase in cancer cases, with a significant distribution across various municipalities and a discernible decrease post the onset of COVID-19. Each cancer type exhibited distinct patterns in terms of clinical staging, treatment approaches, and mortality rates. FVL generally demonstrated better outcomes in terms of early-stage diagnosis and treatment efficacy.

Conclusion: The COVID-19 pandemic has had a considerable impact on cancer patient care in Cali, Colombia. The observed disparities in cancer care underscore the importance of addressing systemic issues within the fragmentated Colombian health system to ensure equitable and effective care across the country during and beyond such health crises.

Keywords: Neoplasms, COVID-19, Cancer Care Facilities, Risk Management, Diagnosis

Prostate Cancer Trends And Geographic Inequities In A Northeastern Brazilian State: Evidence From 1996–2022

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Background/ Purpose: The global burden of prostate cancer followed the widespread use of PSA screening in the 1990s, first in high-income countries and later in low- and middle-income regions. This study examined long-term trends and spatial patterns of prostate cancer incidence and mortality in Sergipe, Brazil, aiming to identify temporal changes and regional disparities for public health strategies.

Methods / Approaches: We conducted a population-based analysis using data from the Aracaju Cancer Registry (1996–2017) and the Mortality Information System (1996–2022). Age-standardized (World Population) and age-specific incidence and mortality rates were calculated across four time periods (1996–2005, 2006–2012, 2013–2017, and 2018–2022). Trend analysis was performed with Joinpoint Regression to estimate Annual Percent Change (APC) and Average APC (AAPC). Spatial patterns were assessed using QGIS and TerraView, and the mortality-to-incidence ratio (MIR) was computed to ensure data completeness.

Results: 10,133 new cases and 3,791 deaths from prostate cancer were recorded. Incidence rates increased from 42.4 per 100,000 (1996–2005) to 76.8 (2006–2012), declining to 72.3 (2013–2017). A rising trend (APC: 11.9%) was observed until 2007, followed by stabilization (APC: -2.0%; $p = 0.03$). Men aged ≥65 had the highest incidence rates. Mortality rates increased from 9.9 (1996–2005) to 17.3 per 100,000 (2018–2022), increasing until 2007 (APC: 12.2%). The MIR increased slightly over time (0.23 to 0.26), indicating good data stability. Spatial analysis revealed marked heterogeneity, with clusters of high incidence and mortality in specific municipalities, particularly in underserved inland areas.

Conclusion: Prostate cancer in Sergipe has undergone a marked rise in both incidence and mortality over the past two decades, followed by a recent plateau. The persistence of geographic disparities and a rising MIR in recent years point to unequal access to early diagnosis and treatment. Targeted policies are needed to address regional inequities and improve prostate cancer outcomes, particularly in high-risk municipalities.

Keywords: Prostate cancer, Incidence, Mortality, Trend analysis, Spatial analysis

Prevalence Characteristics And Disease Burden Of Lung Cancer In Hebei Province From 2012 To 2020

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Background/ Purpose: This study describes and analyzes the prevalence of lung cancer in Hebei Province by collecting data on lung cancer incidence and death from 2012 to 2020.

Methods / Approaches: Lung cancer data were collected from the Hebei Provincial Tumor Registry from 2012 to 2020 and combined and summarized for analysis to calculate the incidence (death) rate, the world population age-standardized and age-specific incidence (death) rates for each year, the age-specific and age-standardized incidence (death) rates for urban and rural men and women, the average annual percentage change in the world-standard incidence and death rates of lung cancer, and the disability Adjusted Life Years (ALYs), YLL and YLD, and related rates.

Results: The World Standardized Incidence Rate of lung cancer in Hebei Province during 2012-2020 was 33.13/100,000, and the incidence rates for men and women were 44.56/100,000 and 22.54/100,000, respectively. The incidence rates in urban and rural areas are 29.05/100,000 and 33.52/100,000 respectively, and the age-specific incidence rates peak in the age group of 80-84 years old.The mortality rate of the world standard is 25.80/100,000 in 2012-2020, and the mortality rates of men and women are 36.56/100,000 and 15.96/100,000 respectively. The urban and rural mortality rates are 25.14/100,000 and 26.12 /100,000 respectively, and the age-specific mortality rate peaks in the age group of 80-84 years.The 2012-2020 DALY for lung cancer in Hebei Province is 484,194 person-years, and the DALY rate for lung cancer is 3.31 per thousand.

Conclusion: 2012-2020 Hebei Province lung cancer incidence mortality rate is a downward trend, male incidence mortality rate is higher than female, after 2015 rural incidence mortality rate back over the urban areas of middle-aged and elderly morbidity and mortality burden gradually increased. We should strengthen the publicity and education of risk factors, improve cancer prevention and treatment literacy, and reduce the burden of disease.

Keywords: lung cancer, incidence, mortality, disease burden

Epidemiological Data Of Rarest Myeloid Malignant Hemopathies From À 40-Y-Old Population-Based Specialised Registry In France

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Background/ Purpose: Our long period registration, allow us to report data on rarest myeloid entities i.e.Chronic Myeloid Leukemia (CML), Chronic Myelomonocytic Leukemia (CMML), Polycythemia Vera (PV), Primary Myelofibrosis (MF).

Methods / Approaches: Cases diagnosed in the population of the department of Côte d'Or, Burgundy, France, were registered between 01/01/1980 and 31/12/2019. They were coded according to ICD-O-3 classification. We described each entity by age at diagnosis, sex-ratio, European population standardized incidence, overall and net survival. We used Poisson regression to assess the mean variation of the incidence rate, Kaplan Meier method and Cox model to estimate Overall Survival (OS) and the Pohar Perme estimator and flexible parametric model on excess mortality to estimate Net Survival (NS) according to age at diagnosis, gender and 10 years-period of diagnostic, and at different time points (5, 10, 20 years).

Results: Incidence rate were 0.8 in MF, 1.5 in CML, 1.6 in PV and 1.9 in CMML, with a sex ratio ranging from 1.15 in PV to 2.27 in MF. Median age was ranging from 58.2 y-o in CML to 79.2 y-o in CMML. Survival was better in women and in younger patients. 10 and 20-years OS were respectively 51.6 and 17.9% in PV, 49.1 and 32.2% in CML, 14.8 and 3.7% in MF and 10.3 and 2.2% in CMML. NS at 10 and 20 years were respectively 77.9 and 25% in PV, 57.4 and 37.6% in CML, 39.3 and 3% in CMML. An increase of survival was major in CML (23.1% to 79.7%) but was tiny in CMML (from 8 to 13%) and decrease in PV (61% to 46%) and in MF (26.4% to 7%).

Conclusion: Rarest myeloid malignancies occurred in older patients except CML and remained with a stable incidence rate. A major improvement in survival was found in CML but not in PV, MF and LMMC.

Keywords: Rare diseases, Myeloid diseases, incidence, Survival

National Trends in Breast Cancer Diagnosis and Outcomes in Albania (2015–2023)

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Background/ Purpose: Breast cancer incidence in Albania has increased notably over the past decade, influenced by demographic aging, urbanization, lifestyle changes, and improvements in early detection and public awareness.

Methods / Approaches: A retrospective analysis was conducted using national data from all public and private hospitals between 2015 and 2023. Incidence and mortality rates were age-standardized using population data from the 2023 national census.

Results: In 2023, 744 women were diagnosed with breast cancer, corresponding to an age-standardized incidence rate of 61.4 per 100,000 women. An additional 15 cases were identified in men. Since 2015, the incidence has risen by approximately 14%. The disease primarily affected older women, with over 75% of cases occurring in those aged 50 and above. The median age at diagnosis increased from 55.2 years in 2015 to 57.6 years in 2023. Tirana, the capital, accounted for 32.3% of all new cases. Hospitalizations due to breast cancer nearly doubled over the study period, rising from 4,665 in 2015 to 8,801 in 2023—an 88.7% increase. Mortality data revealed 206 deaths in 2023 (17 per 100,000 women), with the median age at death increasing from 61 to 65 years. Survival rates remained relatively stable, with a 72% five-year survival rate reported in 2023.

Conclusion: While Albania's age-standardized breast cancer incidence remains among the lowest in Europe, the increasing burden is evident and expected to grow further with ongoing demographic shifts. These findings highlight the urgent need to strengthen national screening programs, improve early diagnostic access, and expand oncology services to meet future public health demands.

Keywords: Breast cancer, Incidence, Mortality, Survive rate

Population Attributable Fractions For Smoking Related Cancers In Ireland In 2022

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Background/ Purpose: Smoking behaviours in Ireland have changed in recent years, and smoking remains a leading preventable cause of cancer. Using data from both the National Cancer Registry of Ireland (NCRI) and a representative national Healthy Ireland (HI) survey, population attributable fractions (PAFs) were estimated to quantify the burden of smoking on cancer incidence in Ireland in 2022.

Methods / Approaches: The annual PAF and attributable cases of smoking prevalence were estimated for 19 causally related cancers as evidenced by the International Association for Research on Cancer (IARC) and the World Cancer Research Fund (WCRF). We used NCRI for cancer incidence (2022) and current and former smoking exposure data (current and former smoking; second-hand smoke (SHS)) from the HI Survey 2015. Internationally recognised relative risks for SHS, current and past smoking were used to estimate PAF.

Results: In 2022, 25.6% of new tobacco related cancers (3756/14654) were attributable to smoking. Lung cancer had the highest total cases attributable to smoking for both men (74.8 %, 1066/1426) and women (71.7%, 944/1316). Similar proportions were observed between men and women for pancreatic cancer (26.3% for men (86/326) and 23.4% for women (70/302)). For stomach cancer, a difference was seen between the PAFs for men (21.2 %, 81/382) and women (4.2% 10/230).

Conclusion: Despite tobacco endgame measures in Ireland, 25.6% smoking-attributable new cancer cases were estimated in 2022. An estimated 3756 new cancers could have been prevented had more effective tobacco control interventions been implemented. The findings suggest the importance of sustained tobacco control measures in Ireland.

Keywords: Population attributable fraction, Tobacco, Tobacco related cancers

Pediatric Cancer Registry In Türkiye 2002-2024 (TPOG & TPHD): The Data From The Last 23 Years

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Background/ Purpose: Each year more than 400.000 new pediatric cancer cases are expected in children and adolescents aged 0-14 globally. The improvement of the survival rates in LMICs is on the global cancer control agenda and cancer registry is an essential element of pediatric cancer control. The results of the 23 years of the pediatric cancer registry from Türkiye is presented here.

Methods / Approaches: Turkish Pediatric Oncology Group and Turkish Pediatric Hematology Association has established the pediatric cancer registry in 2002. The childhood cancer cases registered between 2002-2024 was included in this analysis. ICCC System was used for the classification. Essential demographic findings, ICD-O-3 morphology and topography codes were recorded.

Results: Between 2002 to 2024, 52907 cases were registered. For all cases, median age was 6.6 year (0-19; M/F 29799/23094, 7 hermaphrodit, 7 unknown). Age distribution was 0-4 yrs, 40.9%; 5-9 yrs, 24.7%; 10-14 yrs, 23.2%; 15-19 yrs, 11.1%) The distribution of the tumor types were [number of cases, percentage of total, median age yrs, M/F]: Leukemia (15184, 28.7%, 5.6, 8846/6338); Lymphoma & other RES tumors (9262, 17.5%, 9.3, 6148/3112, 2 unknown); CNS [brain & spinal] (7648, 14.5%, 7.0, 4265/3382, 1 unknown); Symphatetic system (3910, 7.4%, 2.4, 2018/1891, 1 hermaphrodite); Retinoblastoma (1518, 2.9%, 1.5, 803/715); Renal (2397, 4.5%, 3.1, 1184/1210, 2 hermaphrodite & 1 unknown); Liver (747, 1.4%, 2.1, 440/307); Malignant bone (3277, 6.2%, 12.5, 1840/1437); Soft tissue sarcomas (3806, 7.2%, 7.4, 2113/1693); Germ cell (3042, 5.7%, 9.0, 1119/1916, 4 hermaphrodite, 3 unknown); Carcinoma& other malignant epithelial (1731, 3.3%, 13.1, 829/902); Other/non-specific malignant (385, 0.7%, 7.8, 194/191). Five-year survival rate was found as 70.9%.

Conclusion: The survival rates for children and adolescents have been improved to 70% which is comparable for middle-income countries and reflects the level of the pediatric cancer care in Türkiye. This became a valuable source for stakeholders in national and international level.

Keywords: Pediatric cancer, Registry, Children, Childhood cancer

Epidemiological Profile of Cancer in Huíla: Initial Results of the Population-Based Registry (2022-2024).

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Background/ Purpose: Cancer is the second leading cause of death worldwide and causes approximately 10 million deaths per year, 70% of which occur in low- and middle-income countries. In Angola the epidemiological transition is already a reality and the data from the country's first Population-Based Cancer Registry implemented in Huíla in 2020 documents it. Main objective: To describe the epidemiological profile of cancer in Huíla based on the 2022-2024 results of the recently created population-based registry, which collects cases from the four main provincial hospitals.

Methods / Approaches: Age-adjusted incidence rates (AAIRs), standardized to the world population, for 2022–2024 by sex and site.

Results: From 2022 to 2024 it was recorded 2375 cases. Huila's AAIRs were 45.6/100,000 in men and 39.9/100,000 in women. The age at diagnosis was from 0 to 120 years, median diagnosis age was 47 and the higher prevalence was in the age of 30 to 69 years. In men, prostate (13.3/100,000), liver (3.2/100,000), esophageal (2.8/100,000), oral (2.7/100,000), bladder (2.1/100,000), brain (1.9/100,000), lung (1.6/100,00),colorectal (1.6/100,000), stomach (1.4/100,000) and leukemia (0.9/100,000) cancers predominated; in women, cervical (6.0/100,000, breast (5.5/100,000), liver (2.2/100,000), bladder (2.1/100,000), oral (1.6/100,000), brain (1.5/100,000), uterus (1.5/100,000), esophageal (1.5/100,000),stomach (1.4/100,000) and colorectal (1.3/100,000) cancers led.

Conclusion: The occurrence of cancer in Huíla follows the profile: male, black, aged between 30-69 years, diagnosed with prostate cancer. The results show a high incidence of preventable cancers, such as prostate, cervical and breast, which demonstrates the need for investment in early detection and the adoption of educational measures.

Keywords: Cancer registry, Huila, Angola.

Stomach Cancer In Province Of Setif , Algeria: 35-Year Incidence Time Trends By Sex, Age Groups And Comparaison Of Two Time Periods. Setif Population-Based Cancer Registry. 1986-2018

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Background/ Purpose: Setif Cancer registry is the oldest cancer registry in Algeria. First registering tumors in 1986. We aim to analyze time trends of incidence of stomach cancer in province of Setif from 1986 to 2018 by sex and age groups and comparison of two time periods 1986-2004 and 2005-2018

Methods / Approaches: In this analysis of population-based cancer registry data, we included malignant tumours of the stomach (ICD10- C16) diagnosed between 1986 and 2018. Age-standardised incidence rates per 100,000 person-years were computed using the world Standard Population. Incidence time trends were assessed using Joinpoint regression analysis.

Results: 1,645 cases of stomach cancer were recorded between 1986-2018, including 1,048 cases (63.7%) in males , In men, the crude and standardized incidence rates increased, respectively, from 5.0 to 6.0 per 100,000, and from 8.9 to 9.3 per 100,000 between 1986-1995 and 2016-2018, The median age in men is 60 years, Between 1986 and 2018, in men, the Annual Percent Change (APC) is -0.7% (95% CI: -1.6 - +0.2) and +0.9% (95% CI: -0.3 to +2.2) in women. The temporal trends in stomach cancer incidence were reversed between 1986- 2004 and 2005-2018 in both sexes. In men, the APC significantly increased, rising from -2.5% (95% CI: -3.7 to -1.2) from 1986 to 2004 to +4.0% (95% CI: +0.3 to +7.9) from 2005 to 2018. Among women, the APC evolved from -2.8% (95% CI: -5.6 to +0.1) to +6.4% (95% CI: +2.7 to +10.2) during these same periods. Although these trends continued to increase during both periods among individuals over 65 years old of both sexes.

Conclusion: Incidence is increasing in Setif to both sexes after a period of decreasing. This local finding for Setif region does not align with the decline in gastric cancer incidence in many countries worldwide, which calls for additional epidemiological research on this cancer.

Keywords: Setif Cancer Registry, Gastric Cancer, Incidence, Time trends, Stomach

Partnering With Different Organisations For A Greater Public Health Impact

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Background/ Purpose: Cancer prevention and control are critical components of public health requiring coordinated efforts across multiple organizations. The National Cancer Registry (NCR) as mandated by regulation 380 of the National Health Act 61 of 2003, has an advocacy team consisting of 3 members and a Senior Epidemiologist to educate the public and raise awareness on cancer whilst partnering with organizations working with cancer

Methods / Approaches: Heads of organizations working in cancer prevention and control meet sign memoranda of understanding, agreeing to work together and through their respective teams come up with strategies to form collaborations that will achieve greater public health impact

Results: Since its inception in April 2022, the NCR advocacy team has achieved the following:1. Supported CHOC Childhood Cancer Foundation on Flip Flop Day, raising R3350 (February 2024)2. Collaborated with Pink Drive to educate 50 NICD staff on breast self-examination (October 2022).3. Partnered with Prostate Cancer Foundation (PCF), Tembisa Provincial Tertiary Hospital and sponsors to provide 64 prostate-specific antigen (PSA) tests of which 4 tests with high PSA were referred for Urology consults. (September 2023).4. Disseminated information to the general public on cancer with Pink Drive on World Cancer Day (February 2024)5. Colorectal cancer awareness with Global Colon Cancer Association at Chris Hani Baragwanath Hospital (March 2024).6. Collaborated with Cancer Association of South Africa (CANSA) on World No Tobacco Day, educating primary school learners about dangers of smoking with emphasis on Lung cancer. (May 2024).

Conclusion: Continued collaboration and policy support can further amplify these efforts and enhance cancer prevention and control interventions as evidenced by the programmes in our results

Keywords: public health, advocacy, collaboration, awareness, prevention

Epidemiology, Histologic Subtypes, And Survival Outcomes Of Esophageal Cancer: A Retrospective Analysis From Hospital Based Cancer Registry In Upper Egypt

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Background/ Purpose: Esophageal cancer histology varies globally, with adenocarcinoma (AD) dominant in Western populations and squamous cell carcinoma (SCC) prevalent in Asia and Africa. Upper Egypt's epidemiological profile remains understudied. This study examines clinicopathological features, treatment patterns, and survival outcomes of esophageal cancer at Shefa Al Orman Cancer Hospital (SOH), Luxor.

Methods / Approaches: A retrospective analysis of 234 patients (from May 2016 to December 2023) from the SOH Cancer registry compared Esophageal Cancer (C15) AD (8140/3) (n=116, 49.6%) and SCC (8070/3) (n=118, 50.4%). Variables included demographics, tumor location, stage, treatment, and survival (Kaplan-Meier, log-rank test). Chi-square and t-tests compared categorical/continuous variables (SPSS).

Results: Patients showed a median age of 62 among both sexes. AD (8140/3) predominated in males 79.3% vs. SCC (8070/3) 55.1% female;($p < 0.001$). Barrett's esophagus (AD:10.3% vs. SCC:0.8%) and GERD (AD:6% vs. SCC:0.8%) were AD-associated (p=0.02 each). Most tumors were stage IVB (AD: 42.2%; SCC: 42.4%). AD primarily involved the lower third(C15.5) (95.7%), while SCC occurred in the middle third (C15.4) (32.2%; $p < 0.0001$). Neoadjuvant therapy was more common in AD (40.5% vs. SCC 5.9%), whereas SCC received more definitive treatment (34.7%). Surgery was rare (6.8%), predominantly for AD (11.2%; p=0.009). Median overall survival was numerically longer for AD (9 months) vs. SCC (7 months) but not statistically significant (p=0.92).

Conclusion: This study highlights near-equal distribution of adenocarcinoma (AD) and squamous cell carcinoma (SCC) among esophageal cancer patients at SOH, with distinct gender, anatomical, and risk factor profiles. Most cases were diagnosed at advanced stages, reflecting delays in detection and referral. To improve outcomes, targeted awareness campaigns for the public and general practitioners (GPs) are crucial to promote early symptom recognition and timely intervention. Although survival differences between AD and SCC were not statistically significant, the high proportion of late-stage disease underscores the urgent need for enhanced diagnostic and therapeutic strategies.

Keywords: Esophageal Cancer, Adenocarcinoma, Squamous Cell Carcinoma, Survival analysis, Upper Egypt

Real-World Data Of Sex Disparities In Hepatocellular Carcinoma: Insights From Hospital Based Registry In Upper Egypt

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Background/ Purpose: Hepatocellular carcinoma (HCC) is a leading cause of cancer death in Egypt, driven by high HCV prevalence. While sex-based disparities in HCC outcomes are reported, evidence remains inconsistent. This study characterizes sex-specific variations between male and female HCC patients at Shefaa Al Orman Oncology Hospital (SOH), Upper Egypt.

Methods / Approaches: A retrospective cohort study included 811 HCC patients (2016–2023) diagnosed radiologically/pathologically. Data from the SOH cancer registry assessed demographics, AFP levels, BMI, BCLC stage, Child-Pugh class, and treatment. categorical/numerical variables used Chi-square/t-tests; Survival was analyzed via Kaplan-Meier (log-rank test) using SPSS Software Version 26

Results: Males comprised 79.4% (n=644) vs. 20.6% females (n=167), with median age 64 years. BMI differed significantly (p=0.001). and HCV infection (p=0.04). Males presented with more advanced AJCC stage IVB (p=0.009), portal vein thrombosis (p=0.021); no sex disparities were noted in BCLC stage, Child-Pugh class, or HBV status. Overall survival rates were poor (1-/3-/5-year: 36.4%, 17.3%, 6.0%; median OS: 6 months). Females showed significantly better survival across BCLC stages and Child Pough Score (log-rank $p < 0.001$).

Conclusion: HCC in SOH Luxor, Upper Egypt predominantly affects older males, who present with later-stage disease and higher HCV prevalence. Despite females demonstrating improved survival, outcomes remain unfavorable overall. Findings underscore the need for targeted early detection programs, particularly for high-risk males, and further research into sex-specific biological and socioeconomic factors influencing HCC outcomes.

Keywords: Cancer Registry, Hepatocellular Carcinoma (HCC), survival analysis, Sex disparities

Net Survival Analysis Of Cancer Patients In Martinique (2008-2018)

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Background/ Purpose: Martinique is a region of France with low overall incidence rates, but with significant disparities linked to social inequalities for certain cancer sites. This study aims to describe cancer specific mortality in patients diagnosed with cancer over the period 2008-2018 in Martinique.

Methods / Approaches: We have included 10 locations of interest based on their occurrence frequency. We calculated the excess mortality rate and net survival of patients aged 15 and over, diagnosed in Martinique between 2008 and 2015 and followed up until June 30, 2018. We classified 5-year standardized net survival (SNS) over the period 2008-2015: favorable prognosis (SNS > 65%), intermediate prognosis (SNS between 33 and 65%) and unfavorable prognosis (SNS < 33%).

Results: 9,997 cases were included in the analysis. Prostate and breast cancers were considered with a favorable prognosis. The lip-oral-cavity-pharynx cancer, colorectal cancer, body and cervical cancer, multiple myeloma and plasmacytoma were cancers with an intermediate prognosis. The oesophagus cancer, stomach cancer, lung cancer were cancers with a unfavorable prognosis. Excess mortality rate dynamics varied with age for prostate cancer. Excess mortality were highest at diagnosis for the oesphagus and lung cancers, and at the oldest ages for lip-oral-cavity-pharynx cancer. For cervical cancer, the excess mortality rate increased overall, independent of age at diagnosis.

Conclusion: In this retrospective cohort study, in partnership with the French National Network of Cancer Registries, data from a qualified population-based cancer registry comprehensively describe the burden of cancer mortality in a Caribbean region. The results showed major disparities between the cancer sites studied, with overall standardized net cancer survival lower than in mainland France. These epidemiological data have significant implications for the ongoing impact of the national cancer control and treatment measures needed to radically reduce the burden of cancer in these regions.

Keywords: Net survival, Caribbean Region, Mortality, Excess

When Indonesian Minister of Health Directly Supervises Preparation of Cancer Registry Data

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Background/ Purpose: Currently, Health policy in Indonesia is undergoing a transformation, including cancer registration. Although cancer registration activities, both hospital-based and population-based, have been in place since 2013, Indonesian cancer data has never been included in CI5. The Minister of Health is very concerned about this and has held monthly monitoring and evaluation meetings since December 2024 to monitor the preparation of data to be submitted to the IARC call for paper data in 2025-2026.

Methods / Approaches: Based on the activeness of the cancer registration team, reported HBCR data and efforts to abstract universal coverage insurance service data, Dharmais Cancer Hospital together with the Directorate General of Health Services proposed 18 regencies/cities from 514 regions, in 9 of 36 provinces to be submitted as PBCR. From the highest estimates of completeness and coverage, the Minister of Health appointed Yogyakarta City followed by West Jakarta and Bandung as the main priority areas to prepare population-based cancer registration data with incidence and mortality in 2018-2022. Incidence data was carried out on cancer patients from 2018-2022 who live in 3 priority areas from all health facilities, laboratories and national health insurance (BPJS) billing data. The source of mortality data is obtained from health facility data, matching patient data diagnosed with cancer with mortality data at Civil Office for 2018-2022, and reports from the General Election Commission.

Results: For 2018-2022, Kota Yogyakarta reported 2.622 cancers from 374.000 population, Kota Jakarta Barat reported 17.123 cancers from 2.430.000 population, Kota Bandung reported 13.622 cancers from 2.507.888 population.

Conclusion: When the Minister of Health closely monitors the preparation and provision of Indonesian cancer registration data and provides support for all data provision and quality needs so that cancer data in the 3 priority PBCRs can approach the estimated data.

Keywords: Minister of Health, Transformation, PBCR, CI5

Indonesian Population Based Cancer Registry (PBCR) Acceleration ECHO

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Background/ Purpose: Population based cancer registry (PBCR) has an important role to present the cancer situation in one area, region or country. The high-quality data of PBCR is proven by publication in Cancer Incidence in 5 Continents (CI5) by IARC-WHO. Indonesia has no publication in CI5 yet. We plan to publish at least one area in this 2025 submit 2018-2022 cancer data for the publication on 2027. Indonesia already has 13 regional hospitals that have the duty as the PBCR offices for their areas. Dharmais as a NCC has to conduct the high-quality data of each PBCRs, need to share the PBCR practice and know the regional PBCR problems. The Purpose are to do the monitoring and evaluate the regional PBCR data and activities, to increase the capability of the registrar to conduct the PBCR3, to collect the CI5 standard data of PBCR area/s in Indonesia

Methods / Approaches: Telementoring ECHO, Dharmais NCC as a hub and Adam Malik Hospital, M. Hoesin Hospital, M. Djamil Hospital, Fatmawati Hospital, Ciptomangunkusumo Hospital, Hasan Sadikin Hospital, Kariadi Hospital, Soetomo Hospital, Ngoerah Hospital, Wahiddin Hospital and Kandou Manado Hospital as the spokes.There are the didactic from the expert. There is case presentation from the Spoke that will report their achievement and challenges. There are the pre and post test and evaluation form.

Results: 4 out of 12 sessions have been conducted, with 82 registered participants, 242 attendance and an average of over 50 people per session. The post-test results compared to the pre-test increased, and from the evaluation more than 80% stated that it was useful and very useful.

Conclusion: Telementoring ECHO for PBCR is very useful for sharing the experience and to evaluate the achievement of each team member of Cancer Registry in the network hospitals

Keywords: Telementoring, ECHO, PBCR

Laws And Regulations – Protecting Data Security And Patients' Autonomy Or Strangling Collaborative Research?

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Background/ Purpose: Most people diagnosed with cancer want their data to be shared for research that will benefit others, provided the protocol is approved, confidentiality is assured, and data are not sold. When given the option, very few people choose to restrict use of their data to their own treatment. Communicable diseases are notifiable by law in most countries, and statutory registration of cancer is increasing (e.g., in Chile, Japan and Switzerland since 2016). Individual data are invaluable for public health research, but accessing individual data is increasingly difficult.

Methods / Approaches: We will review recent legal developments in Europe as an example. The European Union's General Data Protection Regulation (GDPR) is international law, in force in all EU Member States since 2018. GDPR seeks to encourage research with registry data, not to prevent it (recital 157). Article 9(1) prohibits processing of personal data, as the default position, but Article 9(2) then gives nine broad sets of circumstances under which that prohibition can be set aside. A national authority will usually be expected to decide if the proposed research meets one of these exceptions. We will review three exceptions that apply to most types of epidemiological research, and three challenges that GDPR poses for researchers.

Results: Misinterpretation of GDPR has delayed health research. Legal objections to research with registry data often relate to the perceived risk of re-identification of a data subject, even if names, addresses and ID numbers have been removed. GDPR does not mention the date of birth. It is not yet clear whether the European Health Data Space (February 2025) will facilitate research without compromising its quality.

Conclusion: Wider public consensus is required on an acceptable balance between the citizen's right to privacy and the responsibility of society – to which all citizens belong – to protect the public health.

Keywords: law, confidentiality, data access, public health, cancer registry

Asc-Us Patient Profile And Follow-Up In Martinique Between 2009-2019: Interest For Better Care

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Background/ Purpose: The ASC-US is the most frequent cytological abnormality, accounting for just under 5% of the pap smear tests in France, and its management is a major public health issue. In Martinique, the epidemiological situation is unfavorable, with a different distribution of HPV genotypes. The purpose of this study is to assess the link between clinico-biological ASC-US and high-risk HPV-positive profiles and the evolution of an unfavorable abnormality over time, in women undergoing screening at the University Hospital of Martinique.

Methods / Approaches: We conducted a retrospective descriptive study over the period 2009-2019. We collected data on age, year of screening, HPV genotype, cytology results and histology from the University Hospital cytology database. We merged these data with the PBCR database for the location of the C53 cervix. We performed parametric tests to compare the clinico-biological profiles and calculated the mean time to onset of an adverse event from the first Pap smear/HPV testing.

Results: A total of 1,638 women had ASC-US at the University Hospital, with an average age of 39 at first screening. 54% were HPV positive. The most frequent HPV types were HPV52 (6.7%), HPV68 (6.0%), HPV31(5.6%) and HPV51(5.0%). HPV16 and HPV18 represented 7% and 4% of genotypes respectively. Of these, 93 (5.7%) performed a biopsy after initial screening, and 51 (3.1%) were diagnosed with cervical cancer. Over the study period, the average time to progression to cancer was 2.6 years.

Conclusion: This is the first population-based study to identify patients with a high-risk at an early stage. The results of this study will help to (1) obtain epidemiological information on patients in Martinique who have had an unfavorable outcome; (2) improve the care of patients by checking adherence to guidelines; and (3) inform professional communities about the benefits of early identification of patients with a high-risk profile.

Keywords: Caribbean Region, Atypical Squamous Cells of the Cervix, Cervix Uteri, Human Papillomavirus Viruses

Quality Of Life In Prostate Cancer Patients In Martinique

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Background/ Purpose: Prostate cancer (PCa) and its treatments lead to persistent and long-term effects overall and sexual quality of life. Up to date, no study has evaluated the quality-of-life of West Indian patients with PCa, since the Afro-Caribbean origin and environmental expositions are documented risk factors for PCa. The objective of the present study is to assess overall and sexual quality-of-life in PCa patients in Martinique.

Methods / Approaches: This is a cross-sectional observational survey enrolling volunteer patients diagnosed with PCa from 2019. Patients completed a self-administered questionnaire, assessing overall and sexual quality-of-life at time of diagnosis, including function and symptom scales. We performed non-parametric tests, then linear regressions to identify factors associated with quality-of-life scores before and one year after treatment.

Results: A total of 315 patients were included, and 24 of them died 1 year later. Mean scores were 75.25 ± 20.63 and 82.05 ± 21.99 for global and sexual quality-of-life, respectively. An increase in global quality of life was associated with social (p=.002) and role (p=.001) functioning, while a decrease in global quality-of-life was associated with a higher level of education (p=.046), pain (p=.050) and urinary function disorders (p=.027). A decrease in sexual quality-of-life was associated with erectile dysfunction (p=.019) and urinary disorders (p=.029).

Conclusion: It is interesting to emphasize that, in our sample, patients had high function scores and low symptom scores at diagnosis, which are compatible with a good physical condition before the impact of PCa treatments. Regarding sexual quality-of-life, patients have good scores (> 80) even though some factors were related to a decrease in sexual quality-of-life score. This French West-Indies original study revealed factors associated with overall and sexual quality of life of men with PCa in Martinique. It is necessary to analyze the evolution of global and sexual quality-of-life scores prospectively, from diagnosis to survivorship.

Keywords: Prostatic Neoplasms, Quality of Life, Caribbean Region

Hematological malignancies in Adolescent and Young Adult in a French Department

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Background/ Purpose: We report here epidemiological data on hematological malignancies from 40 years of registration i.e. acute lymphoblastic and myeloblastic leukemias (ALL, AML), Diffuse large B cell lymphoma (DLBCL) and Hodgkin lymphoma (HL) in adolescent and young adults population.

Methods / Approaches: Cases diagnosed in the population of 15 to 39 y-o in Côte d'Or, France, between 01/01/1980 and 31/12/2019 were coded according to ICD-O-3 classification. Entities were described by age at diagnosis, sex-ratio, European population standardized incidence, overall and net survival. We used Poisson regression to assess the mean variation of the incidence rate, Kaplan Meier method and Cox model to estimate overall survival (OS) and the Pohar Perme estimator and flexible parametric model on excess mortality to estimate net survival (NS) according to age at diagnosis, gender and 10 years-period of diagnostic, and at different time points (5, 10, 20 years).

Results: Incidence rate was 0.2/100 000inh/year in ALL, 0.4 in AML, 0.5 in DLBCL and 1.4 in HL. The sex ratio was 0.74 in AML, 1.18 in HL, 1.39 in DLBCL and 2.69 in ALL. Median age of occurrence was 26 y-o in ALL and HL, 29 in AML and 31 in DLBCL. The incidence remained stable since 1980. Survival was better in younger patients in all entities. It was better in women than in men at 5, 10 and 20 years in AML, HL and DLBCL but it's opposite in ALL. OS were close to NS that were respectively at 10 and 20 years, 91.6 and 87.4% in HL, 79.2 and 77.6% in DLBCL; 51% in ALL and 46.5 and 42.4% in AML. An increase of survival was found in all entities, particularly important in ALL and HL.

Conclusion: These data emphasise the scientific attention needed to in ALL and AML in this population

Keywords: AYA, Hemopathies, Incidence, Survival

Cancer Incidence And Stage Shift Between During Covid-19 Pandemic In Japan

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Background/ Purpose: The COVID-19 spread rapidly around the world from December 2019, prompting the Japanese government to declare a state of emergency in April 2020. During this period, the government made a request to only go outside for essential things, municipal health checks, including cancer screening, were temporarily suspended and medical services were restricted. This study aims to investigate changes in cancer incidence and stage shift in Japan during the COVID-19 pandemic.

Methods / Approaches: We used data from the Cancer Incidence of Japan published by the Ministry of Health, Labour and Welfare. Projected cancer incidence was obtained from the official website of the National Cancer Center. Because the projected incidence was provided as 5-year averages, we estimated the annual number of cases from 2015 to 2024 by assuming a linear increase or decrease in incidence over time.

Results: Compared with pre-pandemic estimates, observed cancer incidence in 2020 was lower in many sites, with the exception of pancreatic cancer. Notable decreases were observed for stomach, colorectal, female breast and prostate cancer. In 2021, the number of cases increased slightly but remained below pre-pandemic estimates. By stage, localized cancers decreased in 2020, while distant cancers increased in 2021.

Conclusion: In Japan, municipalities conduct screening for stomach, colorectal, and breast cancer, with some also providing prostate cancer screening. The decline in cancer incidence from 2019 to 2020, especially in localized cancers, was likely due to reduced screening uptake during the COVID-19 pandemic. In contrast, an increase in advanced-stage cases was observed in 2021, suggesting delays in early detection and treatment. These trends indicate that access to healthcare and screening was compromised. As the impact of the pandemic persists, continued monitoring of cancer incidence and stage distribution remains crucial for guiding public health responses and mitigating long-term consequences.

Keywords: COVID-19, Incidence, Cancer screening, Japan

Trends And Mortality Of Lung Cancer In Ibadan Cancer Registry (Ibcr), Nigeria - 15 Years' Experience

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Background/ Purpose: Lung cancer is a leading cause of cancer-related death worldwide. The mortality pattern of lung cancer in Ibadan is not quite well-documented. The Ibadan Cancer Registry, a population-based registry, documents all cancer types occurring in Ibadan and its environs. This study aimed to present the trends and mortality of lung cancer, to update the published local data on lung cancer and help improve treatment and management of lung cancer by the health care providers.

Methods / Approaches: We retrieved date available for all lung cancers registered in the database of the IBCR from 2010-2024. Analysis was done for age, sex, anatomical site, basis of diagnosis and patient's status (alive or dead at the time of last follow-up). Follow-up involved telephone calls to patients and/or their relatives.

Results: 355 cases of lung cancer were diagnosed during the period, of which 184 (51.8%) were males, while 171 (48.2%) were females. The mode distribution constituting 203 (57.2%) case was in the 55-74 age bracket (6th – 8th decade). The ratio was 1.1:1 male to female. Tumors clustered in both genders between the 6th and the 8th decades. Adenocarcinoma occurred most frequently at 91 (25.6%), squamous cell carcinoma 36 (10.1%), and small cell carcinoma 12 (3.4%). Adenocarcinoma occurred earlier amongst females than males (4th decade).As at the last follow up 131 patients had died (36.9%).

Conclusion: Compared to previous studies from this environment, the gender gap for the occurrence of lung cancer has narrowed significantly, Adenocarcinoma has become predominant even amongst the males, and mortality in Lung cancer remains significant at an estimated rate of about 37%. With the advent and positive intervention using ant-EGFR therapy in adenocarcinomas, it will be interesting to know what the frequency of EGFR positive adenocarcinomas of the lung amongst Nigerians is.

Keywords: Lung; Cancer; Gender; Histology; Mortality

Duplicate Search In Cancer Registry, Lebanon

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Background/ Purpose: The National Cancer Registry aims collecting data on all cancer patients. However, cancer patients may have several contacts with the health care system. If health unique identifier is available, the identification of duplicates is done automatically. If not, the challenge is to find a pragmatic algorithm.The current abstract explains the method used in Lebanon to identify the duplicates.

Methods / Approaches: Identification of duplicates is operated at different levels: 1) at the coding time when detected by the coder, 2) at data entry when detected by canreg5, 3) before data analysis. For the latter, data is compiled by year of incidence, which is year of cancer diagnosis. Once the data of specific year completed, the process of duplicate is initiated. Duplicates are cases with same identity, topography and same/close morphology. The process includes: 1) exportation of file from Canreg5, 2) merging the file with the files of 2 previous years, 3) running python script to transliterate names into Arabic to improve accuracy of detection, 4) running R script to identify similarities and potential duplicates based on names, age, sex, topography and morphology, 5) scanning manually the potential duplicates to flag the non-duplicate, duplicate or multiple primary, 6) documenting the result and the record number of initial case, 7) updating the year file for later analysis.

Results: From 2015 to 2016, the percentage of duplicates detected prior to data analysis ranged from 21% to 32%. The highest percentage was observed in 2018 (32%), and the lowest in 2019 21%).These figures do not include the duplicates identified at coding (as not coded and not entered), neither at data entry.

Conclusion: The duplicate identification remains key component in the data cleaning. In the absence of health identifier number, the process is time consuming. There is need to explore using machine learning for duplicate identification and selection.

Keywords: National cancer registry, duplicate identification, Lebanon

Cervical Cancer Burden To Guide Primary Prevention

Nada Ghosn[1], Julia Naim[1], Betty Taslakian[1], Mona Hassoun[1], Aya Hamzeh[1], Mohamad Kabbani[1], Jeanette Karout Khoury[1]

[1]Ministry of Public Health

Background/ Purpose: The introduction of Human Papilloma Virus vaccine requires measuring the burden of HPV infection burden. Various sources can be used including the estimation of the cervical cancer.The objective of the NCR is to guide decision makers on the needed preventive and control measures to reduce diseases mortality and morbidity.The current abstract is to describe the national figures of cervical cancer in the Lebanese population.

Methods / Approaches: Data on cervical cancer is collected by the National Cancer Registry. Data is collected from hospitals and laboratories, including the histopathology laboratories. The data process includes collection, medical coding with ICD-O-3, the entry into the Canreg5, the data cleaning to remove duplicates and abnormal values, then generation of national figures.The national figures are made public on the MOPH website.

Results: From 2005 to 2021, the number of new cases ranged from 75 to 131 cases. The annual average is 99 cases with slow increasing trend. Over the years, it represents 2% of cancer among female patients. The incidence crude rate per 100000 decreased from 4.1 to 3.4, as well the age-standardized rate decreased from 4 to 3.4. Such decrease of the rates may be due to increase in the population denominator with the influx of Syrians in Lebanon. Another factor, can be the use of the HPV vaccine in the private sector. As Lebanon has faced multi-facetted crisis since 2019, another explication can be decreased access to health care.

Conclusion: Cancer disease is late consequence of the HPV infection. There is need to explore new indicators to understand the burden and the impact of the HPV infection, such the positivity of HPV testing at laboratories. Laboratory data need to be explored as assessment and monitoring of HPV infection.

Keywords: National Cancer Registry, Cervical Cancer, Human Papilloma Virus, Lebanon

The Quality Of The Rectosigmoid Junction Cancers Site Registration And Its Effects On Epidemiological Indicators *(2nd Prize, IACR 2025 Poster Awards)*

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Background/ Purpose: Rectosigmoid cancer site registration is a challenge for radiologists, surgeons, pathologists, and cancer registry staff due to the lack of a precise definition. Objective: To review and recode the site of rectosigmoid cancers from a cancer registry using available explorations and quantify their effect on incidence and survival estimates.

Methods / Approaches: This was a retrospective observational study. Rectosigmoid, sigmoid colon, and rectal cancers were selected from the Tarragona Cancer Registry (TCR) from 2014–2015, excluding lower rectal and proximal sigmoid cancers. An experienced surgeon reviewed the selected cancers and all available explorations (rectoscopy/colonoscopy, MRI, CT, pathology record, and intraoperative surgical record) and determined the cancer site. The difference in incidence and survival values before and after the review was calculated.

Results: 234 cancers included in the revision (35.5% distal sigmoid colon, 32.5% rectosigmoid and 32.0% upper rectum site) according to the TCR. After revision: 17.5% of distal sigmoid, 40.2% of rectosigmoid junction and 23.5% upper rectum site. 19.2% of cases could not be classified. The age-adjusted incidence rate of rectosigmoid junction cancer increased from 2.4 to 3.2, which was not statistically significant due to the small number of cases included in the study, mainly due to colon cancer, which decreased from 26.9 to 26.1. The rate of the total rectum cancer did not change (9.3 and 9.4, respectively). The 5-year relative survival did not vary significantly in either distal sigmoid colon, rectosigmoid junction cancer, or rectal cancer.

Conclusion: Missclassification of the rectosigmoid junction results in an underestimation of the incidence of cancer of this site. Although misclassification of rectosigmoid junction cancers does not significantly affect survival, the lack of a well-established definition of the rectosigmoid junction site is a key factor with important implications for patient management. Pending results from other registries, a clear definition of rectosigmoid junction cancers site seems necessary for all professionals.

Keywords: quality control, cancer registration, rectosigmoid junction

Data-Driven Assessment Of Cancer Risk In Primary Sjögren Patients In Latin America And The Caribbean

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Background/ Purpose: Primary Sjogren Syndrome (pSS) is an autoimmune condition combining sicca syndrome, systemic features and auto-immunity, Occurrence of hematological malignancies in pSS patients has been described for a long time but non hematological malignancies (NHM) are still poorly described. An association between pSS and increased risks of overall malignancy, including solid tumors has been reported. Moreover, geographical differences in incidence and prevalence of different type of cancers have been documented. The objective of this study is to describe incidence, survival and mortality on NHM in pSS particulary among the Latin America Caribbean (LAC) region where data remains scarce.

Methods / Approaches: We plan to conduct a retrospective descriptive study in Martinique and Cali-Colombia. Data for pSS collected via the Hospital Clinical Data Warehouse will be linked to the Population-based Cancer Registry in Martinique. Cancer data for Colombia will be collected from a hospital-based cancer registry (HBCR) in Cali and administrative databases. Age-standardized incidence and mortality rates according to sex and health territory democraty in each region will be estimated. Comparative analyses will be conducted between Colombia and Martinique. Survival analysis will be performed using the Kaplan-Meier method.

Results: From 2016 to 2020, 200 and 196 pSS cases are expected for Martinique and Colombia, respectively. Regarding cancer all sites combined, 9110 cases and 29,370 cases have been registred in Martinique and Cali respectively.

Conclusion: This study will contribute to the implementation of global data on cancer risk in pSS populations. It will also provide additional data on differences in cancer incidence, survival and mortality associated with pSS, focusing on Latin America and the Caribbean.

Keywords: Sjogren's Syndrome, Neoplasms, Epidemiology, Latin America Caribbean

Survival Outcomes For Screening-Eligible Cancers During The COVID-19 Pandemic: A Population-Based Registry Analysis

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Background/ Purpose: To assess survival trends for malignancies eligible for screening under adult health check-up programmes (index cancers) during the COVID-19 pandemic using data from the Arkhangelsk Regional Cancer Registry (ARCR).

Methods / Approaches: Complete data on nine index cancers in Arkhangelsk Oblast were extracted from the ARCR database. We evaluated 1-year cancer-specific survival (CSS) and overall survival (OS) during the pandemic period (2020-2021) using actuarial methods, with comparison to the pre-pandemic period (2018-2019). Differences between periods were assessed via log-rank tests. Cox regression analysis identified potential determinants of survival disparities.

Results: The analysis included 12,354 cases of nine index cancers. For all malignancies, we observed declines in 1-year CSS (statistically significant for lung cancer [42.4% to 32.8%, p=0.0001] and cervical cancer [90.3% to 80.8%, p=0.02]) and OS (2.6-11.0 percentage point reductions, significant for seven of nine malignancies). During the pandemic period:Lung disease-related deaths among cancer patients increased 1.5-foldExternal-cause mortality rose from 3% to 9% ($\chi^2[4]=41.8$, $p < 0.00001$)In Cox models adjusted for stage, hazard ratios attenuated from:1.15 (95% CI 1.07-1.24) to 1.10 (95% CI 1.03-1.19) for CSS1.22 (95% CI 1.14-1.31) to 1.18 (95% CI 1.10-1.26) for OSMultivariable analysis confirmed persistently elevated mortality risks (16% higher cancer-related death risk, 24% higher all-cause death risk).

Conclusion: The 15-33% excess mortality during the pandemic was partially attributable to increased advanced-stage diagnoses following screening disruptions. Long-term survival analysis remains necessary.

Keywords: adult health screening, cancer screening, COVID-19 pandemic, causes of death in cancer patients, survival analysis

Age–Period–Cohort Analysis of Lung Cancer Incidence by Histology Type in İzmir, 1998–2017

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Background/ Purpose: İzmir had one of the highest age-standardized rate of lung cancer incidence worldwide. We aimed to describe lung cancer incidence patterns by histologic subtype and sex from 1998 to 2017.

Methods / Approaches: Data for patients aged ≥30 residing in İzmir were extracted from the Cancer Incidence in Five Continents dataset. Joinpoint Regression v5.2.0.0 identified temporal breakpoints and estimated Annual Percent Change (EAPC). Age–period–cohort (APC) analyses via the US NCI APC Web Tool.

Results: Net drift analyses showed the greatest average annual increases for female adenocarcinoma (+7.79%/year, 95% CI 5.87–9.75; $p < 0.0001$) and squamous cell (+12.67%/year, 7.67–16.77; $p < 0.0001$), moderate rises for female small-cell (+4.90%/year, 2.09–7.78; $p < 0.0001$) and male adenocarcinoma (+4.18%/y, 3.27–5.10; $p < 0.0001$), and declines in male large-cell (-4.11%/yeaar, -6.01 to -2.20; $p < 0.0001$) and male small-cell (-0.12%/year, -1.27 to +0.97; p=0.78). Longitudinal age curves peaked between ages 60–70 for adenocarcinoma and squamous subtypes, with female rates rising from ~5/100 000 at 30 y to ~20–25/100 000 by 75 years. Period rate ratios (using 2000 as reference) doubled for female adenocarcinoma by 2015 (RR ≈2.1) and increased 1.9-fold for female squamous, while male large-cell RR fell to ≈0.7. Cohort rate ratios climbed steeply for later birth cohorts in adenocarcinoma (from 0.1 in 1913 to > 10 by 1983) and small-cell (up to ≈3 in females), but remained near unity for large-cell. Local drift curves confirmed age-specific APCs of +6–9%/year in mid-life for adenocarcinoma and small-cell, versus -3 to -5%/year declines in large-cell at older ages. These combined findings underscore subtype- and sex-specific patterns in aging, period, and cohort effects.

Conclusion: Female adenocarcinoma and squamous subtypes exhibited the steepest incidence increases while male large-cell and small-cell carcinomas declined, underscoring the need for subtype-focused surveillance and investigation of sex-specific risk factors.

Keywords: lung cancer, age-period-cohort analysis, histological subtypes, incidence pattern

Child and Adolescent Central Nervous System Tumor Incidence: An Age–Period–Cohort Analysis in İzmir, 1993–2017

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Background/ Purpose: Central nervous system (CNS) tumors are one of the most common malignancies observed among childhren. Understanding of how incidence varies by age, calendar period, and birth cohort can provide insights into potential etiologic factors and diagnostic practices. This study aimed to examine changes in CNS tumor incidence among children and adolescents (aged 0-19) in İzmir, Türkiye between 1993 and 2017 using an age–period–cohort (APC) approach.

Methods / Approaches: Data were obtained from the İzmir population-based cancer registry for individuals aged 0–19 years diagnosed with CNS tumors. Age-specific and age-standardized incidence rates (ASIR) per 1,000,000 were calculated using the World Standard Population. APC modeling was used to estimate net annual changes and assess age, period, and cohort effects.

Results: The ASIR increased from 20.4 (95% CI: 16.3–24.4) per million in 1993–1997 to 30.5 (95% CI: 25.8–35.2) per million in 2013–2017. The highest age-specific rate was observed in children aged 5–9 years, reaching 38.6 (95% CI: 27.8–49.4) per million in 2008–2012. APC analysis showed a net drift of +2.05% per year (95% CI: 0.92–3.19), indicating an overall annual increase in incidence. Although age deviations were not significant, period and cohort rate ratios were elevated, with children born after 2000 showing higher risks. The longitudinal age curve showed a primary peak at ages 5–9 years and a secondary increase at ages 15–19 years.

Conclusion: The incidence of childhood CNS tumors in İzmir has steadily increased between 1993 and 2017. This increase appears to be influenced by both calendar period and birth cohort. There

is a need to continue montioring and do more research to understand whether the role of environmental exposures, genetic disposition or advances in diagnostic capacity.

Keywords: childhood cancers, brain tumors, central nervous system tumors, incidence pattern

Epidemiological Patterns Of Histological Subtypes in Lung Cancer in China

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Background/ Purpose: Lung cancer is the leading cause of cancer burden in China. However, reports on histological subtypes of lung cancer in China are few, and we aims to estimate the incidence of major subtypes of lung cancer to provide information for prevention strategies.

Methods / Approaches: Data from 157 cancer registries in China were extracted from Cancer Incidence in Five Continents (CI5) Volumes XII, and the proportions of major histological subtypes of lung cancer was calculated. Combined with the incidence data of lung cancer in China in 2022, the incidence rate of histological subtypes was estimated. We quantified the burden of lung cancer incidence attributable to smoking and ambient fine particulate matter (PM2.5) exposure.

Results: In 2022, there was an estimation of 658,722 and 401,862 new lung cancer cases among males and females in China, respectively. In males, 31.0% of total lung cancer cases was SCC [age-standardized incidence rate (ASIR): 16.0/100,000], 45.6% was adenocarcinoma (ASIR: 24.0/100,000), 10.6% was small-cell carcinoma (ASIR: 5.5/100,000), and 7.6% was large-cell carcinoma (ASIR: 3.9/100,000). In females, the corresponding proportions were 11.8% (SCC; ASIR: 3.4/100,000), 72.6% (adenocarcinoma; ASIR: 22.3/100,000), 5.1% (small-cell carcinoma; ASIR: 1.5/100,000), and 6.9% (large-cell carcinoma; ASIR: 2.0/100,000). The cancer incidence attributed to PM2.5 varies between 8-20% in different regions. Smoking accounted for 54.9% (95% CI: 47.6%-61.2%) of lung cancer cases in males aged ≥20 years (ASIR: 48.06/100,000). In addition, 54.9% (95% confidence interval[CI]: 47.6%-61.2%) of lung cancer cases among male individuals aged 20 years and over were attributable to smoking, corresponding to an ASIR of 48.06/100,000. The PAF among females (8.9%, 95%CI: 7.9%-9.9%) was significantly lower than males, with an ASIR of 4.1/100,000.

Conclusion: In China, incidence differs across the four lung cancer subtypes, with adenocarcinoma being the most common. Tailoring prevention and control strategies to specific subtypes is essential.

Keywords: lung cancer, air pollution, histological subtypes, smoking, China

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