

Opportunities for Collaboration Between the UK and the UAE in Cancer Care



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1 | Introduction by Campaign Co-Chairs



Lord Ajay Kakkar,
Emeritus Professor of Surgery,
University College London,
President of the Thrombosis Research
Institute and
Chairman of King's Health Partners;
Advisory Committee Member,
UAE-UK Business Council

The trade and investment relationship between the UAE and the UK is now worth around £25bn/AED 115bn a year, an increase of nearly 50% on the previous year. The UAE is the UK's 19th biggest trading partner and its 12th largest export market. There has been significant investment in healthcare in both directions since the UK-UAE Partnership for The Future and Sovereign Investment Partnership Agreements were signed by both countries in 2021. Much of this investment reflects the rapid pace of innovation, research and adoption of new technologies such as Artificial Intelligence (AI) in the life sciences sector in the UK and the UAE.

The UAE and the UK are at similar stages in their respective journeys in terms of developing new strategies for tackling cancer and overcoming the barriers that stand in our way. One of those challenges relates to prevention, screening and diagnostics. This is broad in scope, ranging from how to encourage people to follow a healthier lifestyle and present themselves earlier for screening (and how we can effectively take screening providers out to the community), to how we can harness AI and other emerging technologies to improve the accuracy and speed of diagnostics and the efficacy of treatment.

For UK-UAE collaboration in cancer prevention, research and treatment to flourish, an enabling environment for the exchange of data between both countries is necessary, along with a regulatory ecosystem geared towards maximising the potential for joint projects.

Both the UK and the UAE are taking a fresh look at how end-of-life care is managed - in the home, the community and in hospices and hospitals - and there is much that our two countries can learn from each other in this specific area. There are strong opportunities for scientific and commercial collaboration between the UK and the UAE in palliative care.

The UK and the UAE have built a strong foundation for working together to tackle the global challenge of cancer and improve patient outcomes. This paper outlines in more detail the collaborative opportunities that might emerge over the years ahead and concludes with recommendations to government, business, academia and the wider stakeholder community on how to bring them to fruition. ●



HE Dr Maha Barakat,
Assistant Minister for Health
and Life Sciences,
UAE Ministry of Foreign Affairs;
Advisory Committee Member,
UAE-UK Business Council

2 | Executive Summary

In January 2023 the UAE-UK Business Council hosted a panel discussion on trends in UK and UAE Cancer Care at Arab Health in Dubai. The outcome of this discussion was the formation of a campaign group of oncology experts from both countries which, through virtual meetings taking place over a nine-month period, identified three specific areas where the potential for bilateral commercial cooperation was the strongest. These three areas are:

- Cancer Screening and Diagnostics
- Data Sharing
- Palliative Care

The UAE-UK Business Council hosted a one-day Summit in Dubai during Arab Health in February 2024 to explore all three areas in greater detail. This paper reflects the main discussion points of the campaign expert group meetings and the Summit and proposes recommendations to both the UAE and the UK Governments, and to industry and academia in both countries, intended to foster and enhance closer commercial collaboration in cancer prevention and care as well as address existing regulatory barriers that might hinder such partnerships.

By considering and implementing the recommendations made in this paper, both the UK and the UAE can jointly be at the forefront of progress towards reducing the incidence of cancer, improving treatment options and optimising patient outcomes, in both countries as well as globally.

The key policy recommendations made in this paper for encouraging closer collaboration in cancer care between the UK and UAE can be found in section 9 of this paper. ●

3 | The UAE-UK Business Council

The UAE-UK Business Council is a thought leadership forum that brings together senior business leaders, entrepreneurs, academics, government representatives and other stakeholders from both countries to identify new and emerging opportunities for collaboration and help to resolve barriers to trade and investment between the UAE and the UK.

It works in partnership with the UAE and UK Governments, providing strategic advice on the interests and concerns of our member companies and the wider business community. This strategic advice is given through both informal channels and through the formal structure of the Ministerial UK-UAE Joint Economic Committee. In addition, it runs thematic campaigns, hosts events and produces policy papers. It is funded entirely by its members and is supported by a Joint Secretariat based in both countries.

The Business Council is registered in the UK as a Not-For-Profit Company Limited by Guarantee and is guided in its work by a high-level Advisory Committee and a Governance Committee, as well as by its two Co-Chairs, HE Ahmed Al Sayegh and the Rt Hon Lord Udney-Lister. ●

4 | UK-UAE Collaboration in Cancer Care: The Scale of the Challenge and the Opportunity

4a | The Global Challenge

According to the Global Burden of Diseases, there were over 19 million new cases of cancer diagnosed globally in 2020, the most common being breast cancer (12.5% of all cancers), lung cancer (12.2%), colorectal (10.7%) and prostate (7.8%). Breast cancer accounts for 25.8% of all cancers in women and lung cancer 15.4% of all cancers in men¹.

There were 9.96 million cancer deaths globally in 2020. Over 2 million cancer cases per year can be attributed to infection and 741,000 to alcohol consumption. 30.2 million new cancer cases are predicted annually worldwide by 2040 with 16.3 million deaths².

4b | The Challenge in the UK and the UAE

Breast cancer is the most common primary cancer in both the UK and the UAE (58,756 cases in the UK and 1,142 cases in the UAE in 2022). There are, however, some differences between the two countries in terms of the ten most common primary cancers - in the UAE, thyroid and cancer of the uterus feature in this list, in the UK, lung and kidney cancer feature. Breast cancer is the fourth most common cause of death for women in the UAE (and is first diagnosed at a younger age than in the UK). In the UK it is the eighth most common form of death for women, behind lung cancers, which are the most common form of cancer mortality for both men and women in the UK. Late diagnosis and premenopausal breast cancer partly explain the high incidence, morbidity, and mortality rate among breast cancer in women in the UAE. Thyroid cancer has surpassed other cancers in the UAE with more studies and research required to identify the risk factors and reasons.

Primary site UAE	Number of malignant case 2019		Primary site UK	Number of malignant case 2019
Breast	883		Breast	56,987
Thyroid	501		Prostate	55,068
Colorectal	413		Lung	48,754
Skin	278		Bowel	44,706
Leukemia	220		Skin (Melanoma)	17,845
Non-Hodgkin's Lymphoma	215		Non-Hodgkin's Lymphoma	13,979
Prostate	172		Head and Neck	13,049
Bronchus and Lung	151		Kidney	12,050
Lip, Oral Cavity & Pharynx	142		Pancreas	11,031
Uterus	125		Bladder	10,515

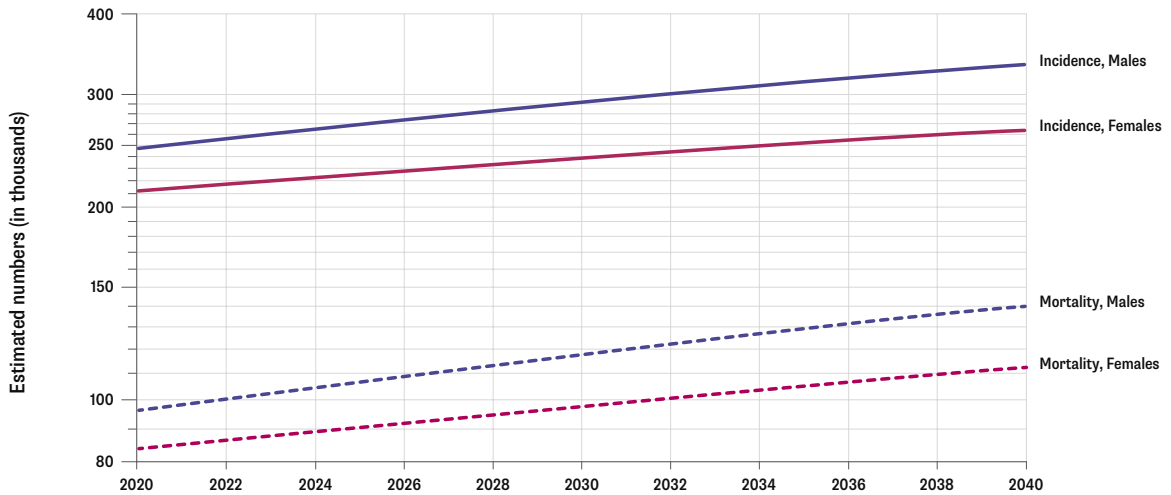
Source: Annual Report of the UAE National Cancer Registry 2019; World Cancer Research Fund, 2022

¹World Cancer Research Fund: <https://www.wcrf.org/cancer-trends/worldwide-cancer-data/>

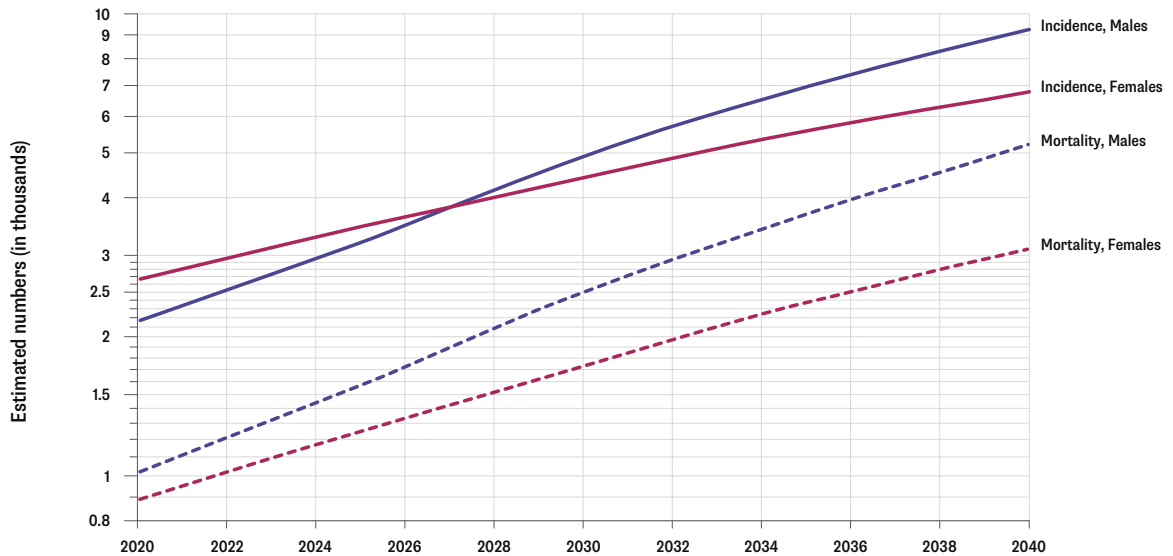
²IARC - INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (who.int): <https://www.iarc.who.int/>

Estimated Rise in Cancer Incidence 2020-2040

UK



UAE



Source: IARC, WHO Global Cancer Observatory - <https://gco.iarc.fr/en>

(Note: the steep rise in projected cancer incidence in the UAE shown in the above graph can be partly explained by the rapid growth in projected population between 2020 and 2040 and the resulting change in age distribution of the population.)

The estimated number of cancer incidences is likely to quadruple for men and triple for women in the UAE between 2020 and 2040 (this can partly be explained by increased take up of screening, more accurate diagnosis and the high population growth expected in the next two decades). Mortality rates will also increase by a similar factor. In the UK, the growth in incidence and mortality between 2020 and 2040 will be less dramatic due to increased prevention efforts, screening, advancement in treatment and low population growth. ●

5 | The Campaign

This campaign was launched in Spring 2023 following a Panel Discussion we hosted during Arab Health in Dubai in January 2023, which explored the potential for future collaboration between the UK and the UAE in cancer care.

In consultation with the UAE-UK Business Council Advisory Committee, our members and stakeholders and both Governments, we established a campaign group consisting of 40 eminent professionals from the UAE and the UK.

The campaign group was co-chaired by two members of the UAE-UK Business Council's Advisory Committee, Lord Kakkar, Emeritus Professor of Surgery, University College London, President of the Thrombosis Research Institute and Chairman of King's Health Partners; and HE Dr Maha Barakat, Assistant Minister for Health and Life Sciences, UAE Ministry of Foreign Affairs. A series of joint meetings was held during the course of 2023 to identify specific areas which presented the strongest opportunity for closer bilateral collaboration. The three priority themes were identified as:

- Cancer screening and diagnostics
- Data sharing (both patient data and data relating to research projects and clinical trials)
- Supportive and palliative care

Participants were then invited to join these subgroups based on relevant professional and organisational experience, of which further virtual meetings were conducted over the course of the year.

The UAE-UK Business Council hosted a knowledge sharing summit on Cancer Care, featuring the campaign participants as panellists, in February 2024, during Arab Health in Dubai. The Summit was focused on:

- the importance of utilising AI and other technologies to enhance the efficacy of screening and diagnostics tools;
- the importance of developing robust and coherent data flows between the UK and the UAE that can optimise the potential for developing joint research projects and the sharing of anonymised and de-anonymised patient data;
- what the UK and the UAE can learn from each other in supportive and palliative care and improving end of life care - in the home, the community and in hospices.

The key objectives of the discussion were:

- To identify the optimal opportunities for commercial collaboration between the UK and UAE in cancer care.
- To share know-how and best practice between the UK and the UAE in data, regulatory and policy frameworks that would help to foster this collaboration.
- Identify potential regulatory and non-regulatory barriers to collaboration.

The Summit resulted in a commitment to produce a paper reflecting the key findings of the campaign, which would be submitted for consideration to both the UK and UAE Governments at the next Ministerial Joint Economic Committee Meeting.

It was agreed that the paper would make recommendations for fostering closer collaboration between the two countries in cancer care, and that these recommendations would include those to be adopted and implemented at a government-to-government level, those to be addressed by the business community and academia, and those to be actioned by the UAE-UK Business Council itself.

Following the submission of this paper to the UK-UAE Ministerial Joint Economic Committee, the UAE-UK Business Council will track delivery against the recommendations made in this paper. ●

6 | Cancer Screening and Diagnostics



The UK and the UAE are both creating strong enabling environments for the development of new innovations and technologies in cancer screening and diagnostics.

In the UAE, for example, the 'Emirati Genome Programme' aims to map the genetic make-up of the Emirati population, using cutting-edge DNA sequencing and AI technologies to generate high quality and comprehensive genomic data. The resulting reference genome will lead to a personalised and preventive healthcare programme for the UAE's citizens and a comprehensive understanding of rare genetic disorders and new treatments³.

Whilst this study presents great potential, it will need to be supported by a clear and consistent framework for regulating the use of the human genome in the UAE. The UAE has recently enacted a federal law on the use of the human genome, which aims to ensure the safe and ethical use of genomic data and information, protect the confidentiality and privacy of individuals, and promote scientific research and innovation. However, this law is still new and has not been fully implemented yet. Moreover, it does not cover some aspects that are relevant for screening and diagnostics, such as the criteria and procedures for obtaining informed consent, the scope and conditions for storing and transferring genomic data and information outside the UAE, and the mechanisms and standards for ensuring the quality, accuracy, and validity of genomic tests and products.

Given that cancer is a disease of genomic change and that one in six cancers have a hereditary component, the future evolution of cancer screening and diagnostics is likely to feature innovations centred around genomics, an area of particular strength in both the UK and the UAE. The development of genomics-derived screening and diagnostics technologies therefore presents a strong area of collaborative opportunity between both countries.

Targeted screening incorporating genomics will help improve early detection and recovery rates. Circulating tumour DNA (ctDNA) / blood tests, for example, are able to diagnose hard to find cancers such as pancreatic and bile-duct tumours, which normally take 9-12 months to diagnose, (although these only apply to tumours that secrete ctDNA).

The UAE is keen to address the low uptake of screening among its population, especially for breast, colon, and cervical cancers and there would be mutual benefit in exchanging best practice with the UK on delivering impactful cancer awareness campaigns, and on using AI and other technologies to improve the accuracy and speed of diagnostics. However, such initiatives would need to take into account the UAE Federal Law No. 2 of 2019 on the use of ICT in health fields, which regulates the collection, exchange, and storage of health data and information, and requires the consent of the patient or their legal representative for any screening or testing involving the use of ICT. This and other related laws and regulations in the UAE restrict the

³The Emirati Genome Programme | The Official Portal of the UAE Government: <https://u.ae/en/information-and-services/health-and-fitness/research-in-the-field-of-health/the-emirati-genome-programme>

movement of health data outside of the UAE, particularly in relation to genetic data.

Therefore, this paper recommends that the UAE and the UK work together to develop a comprehensive and harmonised framework for collaborations concerning the use of the human genome in screening and diagnostics, or research and development, taking into account the issues of consent, privacy and data law in both jurisdictions.

Since the UAE has recently established the Emirates Drug Establishment there could usefully be knowledge sharing around how the UK has regulated the medical product industry, including the following issues that apply to both general medical diagnostic products as well as genomic products:

- The definition and classification of medical products, and genomic tests and products, and the requirements and procedures for obtaining marketing authorisation and approval for exclusive marketing of them.
- The rules and controls for conducting medical screening, genomic screening and testing, including the criteria and procedures for obtaining informed consent, the methods and means for providing genetic counselling, and the cases and conditions for conducting obligatory or voluntary screening and testing.
- The standards and guidelines for ensuring the quality, safety, and effectiveness of screening tests, genomic tests and products, and the mechanisms and procedures for monitoring and evaluating their performance and outcomes.
- The terms and controls for storing, processing, generating, and transforming health data, genomic data and information, and the cases and conditions for storing or transferring them outside the UAE, in accordance with the principles of data protection, confidentiality and security.
- The rights and obligations of the individuals, entities and authorities involved in the use of the human genome in screening and diagnostics, and the mechanisms and procedures for ensuring accountability, transparency and compliance.

Behaviour and lifestyle are significant causal factors in a number of cancers. There would be value in encouraging a sharing of best practice and new solutions between the UK and UAE in the field of behaviour science and of the different tools that can be developed to encourage positive lifestyle changes.

Earlier detection through effective screening programmes is significantly cheaper and more cost effective than treating a cancer diagnosed at a later stage – programmes designed to educate the public about prevention and presenting for screening when appropriate to do so tend to attract less public funding and be more reliant on charitable funding in both countries, despite the obvious public healthcare and cost benefits derived from such programmes.

The skills and competences required to effectively deliver a screening and diagnostics programme are broader in scope than commonly assumed. As well as the technical competence required to operate complex screening and diagnostics equipment, data management and analysis competences are required, along with strong interpersonal and communication skills to support patients and their carers and relatives as they go through the screening and diagnostics processes. As technologies become more sophisticated and complex, the UK and the UAE could supplement the sharing of technological know-how with knowledge sharing on improving the wider skillsets required of medical professionals in this area.

Medical insurance programmes can also boost the uptake of screening. The IFHAS programme launched by the Abu Dhabi Public Health Centre, for example, makes it mandatory for the patient to maintain an up-to-date screening record in order to renew their annual health insurance.

Venture capital, angel investment and seed funding can all help early stage, innovation-rich cancer screening start-ups grow and commercialise their products. Such start-ups have the best chance to succeed when the ecosystem supporting them is joined up, connecting entrepreneurs, research institutes, sources of finance and accelerators to each other. One such example is Cambridge Innovation Capital.

6a | Case Study 1: Cambridge Innovation Capital

Cambridge Innovation Capital has invested in and been on the board of companies that have sought to improve early detection of cancer (Abcodia) and improve diagnostics (the liquid biopsy company Inivata -ctDNA) and genomic diagnosis (Congenica). As one of the global leaders for cancer research⁴, the UK has been at the forefront of research and development within oncology; however this is partly dependent on grants and donations in order to further this work. Investment in cancer research is vital for developing new and existing screening methods and diagnostic technologies to enable scientists and researchers to explore innovative approaches to cancer detection such as biomarker discovery.

6b | Case Study 2: The UAE-UK Strategic Investment Partnership

The UK Office for Investment signed the Strategic Investment Partnership with Mubadala, the Sovereign Wealth Fund of Abu Dhabi, in September 2021, to support UAE investment into four key sectors in the UK - technology, infrastructure, healthcare and renewable energy - the aim being to facilitate much needed new finance into research and development programmes and enable knowledge transfer between both countries. The programme has enabled UAE investment into companies such as Exscientia, an Oxford based AI platform for drug discovery, and SV Health Investors, a UK based biotech fund, established by Kate Bingham, who led the UK COVID vaccine rollout, which has invested in over 215 life sciences projects.

6c | Case Study 3: Friends of Cancer Patients - Pink Caravan Initiative

Pink Caravan is a pan-UAE breast cancer initiative that falls under Friends of Cancer Patients' umbrella "Kashf" for early detection of cancer and aims to raise awareness around breast cancer early detection and screening methods, whilst combatting the perceptions and stigmas surrounding women's health and cancer.

The initiative was launched in 2011 under the patronage of His Highness Sheikh Dr Sultan bin Mohammed Al Qasimi, Member of the Supreme Council and Ruler of Sharjah and Her Highness Sheikha Jawaher Bint Mohammed Al Qasimi, Founder and Patron of the Friends of Cancer Patients.

The Pink Caravan vision is to establish itself as a Centre of Excellence for breast cancer screening and women's health by creating a preferred, effective and sustainable medical clinic for both patients and employees making knowledge, prevention and early detection services accessible across the UAE community and engaging with partners to increase effectiveness, outreach and impact of screening programmes and other services. Since 2011, the Pink Caravan initiative has conducted 94,184 examinations and 23,408 mammogram screenings, over 200 per month on average.

The Pink Caravan Medical Mobile Clinic is a medical community facility that travels across the United Arab Emirates providing onsite awareness and screening for breast and cervical cancer, increasing the chances of early detection and survival.



⁴Our strategy to beat cancer | Cancer Research UK: <https://www.cancerresearchuk.org/about-us/our-organisation/our-strategy-to-beat-cancer>



6d | Importance of Genomic Screening and Opportunities for UK-UAE Collaboration

Given that cancer is a disease of genomic change and that one in six cancers have a hereditary component, the future evolution of cancer screening and diagnostics is likely to feature innovations centred around genomics, an area of particular strength in both the UK and the UAE. The development of genomics-derived screening and diagnostics technologies therefore presents a strong area of collaborative opportunity between both countries.

A multi-stakeholder approach, including patients, insurance companies, private and public medical providers and policy makers / regulators, as well as the innovators developing new technologies in screening and diagnostics, is needed to ensure patients have access to the best opportunities for prevention and early diagnosis. The UK has evolved its approach to screening and diagnostics over many years, and only incremental improvements can be achieved in such a long established system; whereas the UAE has the benefit of being a relatively young country, able to design its policies in this area from scratch, without the baggage of systems that were originally put together several decades ago for a healthcare environment very different from today's. The UAE could be an early adopter of screening methodologies that incorporate genomic and other relevant risk factors that helps personalise screening based on individual risk.

The incidence of malignant disease differs across populations and is not just restricted to diet or geography. Fundamental biology is beginning to understand why certain people may get cancers, and others may not, even though both hold the

same genetic mutations. Mutations in themselves are not enough to trigger malignancy.

By harnessing the power of AI, new screening technologies will be able to identify more accurately people who will go on to get the disease, and thereby identify at a much earlier stage what course of treatment is needed, and when, to best combat it. Multi-modal machine learning will integrate data from all of the screening sources to optimise understanding of the patient profile.

Closer collaboration between academia and industry will help to expedite the transition from scientific innovation and discovery to commercialisation and economic benefit (£25bn is the estimated cost to the UK economy caused by cancer care - mainly due to loss of productivity in the workforce)⁵.

One shared anxiety between cancer patients in the UAE and the UK is concern about waiting times for treatment - the UK and the UAE should share know-how in reducing waiting times for chemotherapy, surgery and radiotherapy.

This paper also recommends that the UAE and the UK collaborate on developing and implementing effective and culturally sensitive cancer awareness campaigns, and on leveraging AI and other technologies to enhance the accessibility, affordability, and quality of screening and diagnostics. To achieve this, we suggest that the UAE and the UK establish a "Healthcare Leaders' Forum" composed of representatives from the relevant ministries, health authorities, academic institutions, and civil society organisations, to identify the gaps and needs, share the best practices and lessons learned, and coordinate the actions and resources. ●

⁵The Cost of Cancer: <https://policyexchange.org.uk/wp-content/uploads/2010/02/the-cost-of-cancer-feb-10.pdf>

7 | Data Sharing and Privacy – Barriers and Opportunities



7a | Legislation and Collaboration – Barriers and Opportunities

Common societal perceptions towards data sharing and consent tend to be negative, especially with regards to privacy, how this data is used and who it is shared with, creating a potential barrier to the sharing and transfer of useful health data between entities and jurisdictions.

Both the UK and the UAE have robust data protection laws and legislation in place to protect personal data, with clear guidelines on the use of health data and its transfer overseas. The UK and the European Union adopted the General Data Protection Regulation (GDPR) in 2016 to regulate information privacy in the UK and EU, in accordance with EU privacy law and human rights law, and also govern the transfer of personal data outside the EU⁶. After the UK left the EU in 2020, it continued to apply the GDPR. In addition to UK GDPR, the Data Protection Act 2018 governs the use and sharing of personal health data in the UK and establishes clear guidelines and safeguards for data protection, consent management and data sharing agreements, providing legal certainty and accountability for stakeholders involved in the

sharing of health data. It also allows for the introduction and adoption of addendums on specific matters, such as for international data transfers.

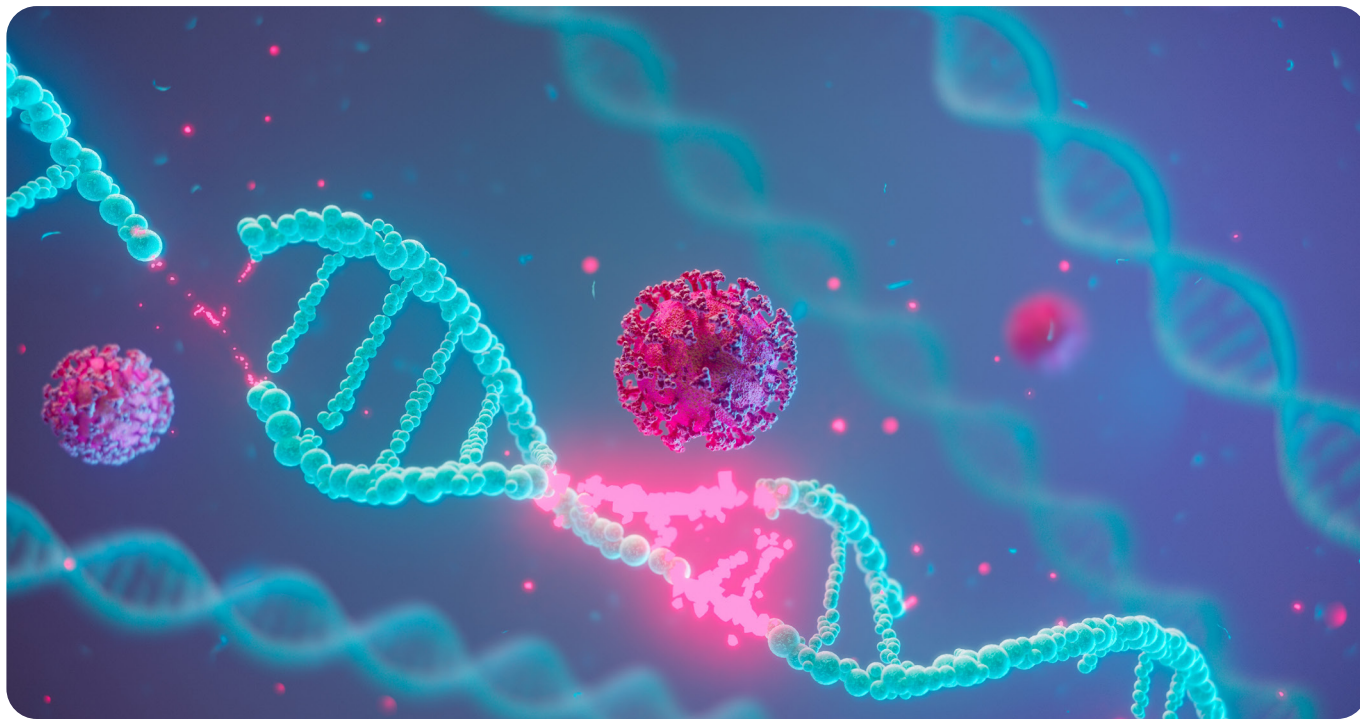
In the UK, collaboration between healthcare regulators and healthcare providers has enabled the growth of data-sharing networks and platforms such as the UK's National Disease Registration Service (NDRS) which includes the National Cancer Registration and Analysis Service (NCRAS) - these population-based disease registration services utilise real-world clinical data, quality assurance, surveillance, analysis and monitoring⁷. These platforms can provide secure infrastructure, standardised data formats and governance mechanisms to enable health data exchange whilst ensuring patient privacy and data security.

In 2019, the UAE issued Federal Law No. 2 of 2019, concerning the Use of the Information and Communication Technology in the Area of Health ("ICT Health Law")⁸. This law was the first Federal data/privacy law in the UAE that was limited to healthcare data covering the entirety of the UAE and its free zones. This law establishes a central electronic health data and information exchange (HIE) to facilitate

⁶pdf (europa.eu): <https://data.consilium.europa.eu/doc/document/ST-9565-2015-INIT/en/pdf>

⁷National Disease Registration Service (NDRS) - NHS England Digital: <https://digital.nhs.uk/services/national-disease-registration-service>

⁸UAE-Federal Law No. 2 of 2019 to Protect Health Data - Meyer-Reumann & Partners: <https://meyer-reumann.com/latest-articles/uae-federal-law-no-2-of-2019-to-protect-health-data/>



confidential access, collection and exchange of health data and information within the UAE⁹.

One of the challenges identified is the lack of an enabling environment for the exchange of data between the UK and the UAE, which hinders the development of joint research projects and clinical trials, as well as the adoption of innovative technologies such as AI and genomics in cancer care. The UK and the UAE should negotiate data adequacy recognition and agree on a memorandum for joint use on data anonymisation across genomics and other health data. However, these suggestions may not be sufficient to address the complex and evolving regulatory landscape of data protection and governance in both countries, especially considering the recent developments in the EU and the UK regarding the GDPR and the UK-EU Trade and Cooperation Agreement.

Therefore, this paper recommends that the UAE and the UK develop a comprehensive and flexible framework for cooperation and alignment in data sharing and governance, which would consider the different legal and cultural contexts, the existing and emerging international standards and best practices, and the specific needs and interests of

the health and research sectors. This framework would address the following issues:

- The principles and criteria for determining the adequacy and equivalence of data protection and governance regimes, and the mechanisms and procedures for negotiating and granting data adequacy recognition, as well as for monitoring and reviewing its implementation and compliance.
- The rules and controls for transferring and processing health data and information, including the cases and conditions for obtaining consent or relying on other legal bases, the methods and means for ensuring data anonymisation or pseudonymisation, and the safeguards and measures for protecting data confidentiality and security.
- The standards and guidelines for ensuring the quality, accuracy, and validity of health data and information, and the mechanisms and procedures for verifying and validating data sources, methods, and outcomes.
- The rights and obligations of the data subjects, data controllers, and data processors, and the mechanisms and procedures for ensuring transparency, accountability, and

⁹Data protection laws | The Official Portal of the UAE Government: <https://u.ae/en/about-the-uae/digital-uae/data/data-protection-laws>

compliance, as well as for resolving disputes and enforcing remedies.

- The terms and conditions for conducting joint research projects and clinical trials, and the mechanisms and procedures for ensuring ethical approval, scientific rigor, and public benefit.

This paper also recommends that the UAE and the UK identify the key stakeholders and mechanisms for dialogue and coordination, and the potential areas and projects for collaboration and innovation, such as the development of a UAE-UK health data hub, the harmonisation of ethical and technical guidelines for AI and genomics, and the facilitation of cross-border clinical trials and research partnerships. To achieve this, this paper suggests that the UAE and the UK establish a joint committee or forum, composed of representatives from the relevant ministries, health authorities, academic institutions, and private sector entities, to define the vision and objectives, set the priorities and action plans, and mobilise the resources and support.

7b | The Importance of Data and AI

AI-enabled solutions will play an increasingly important and revolutionary role in cancer prevention, effective screening and treatment as data-driven decision making becomes more routine. The era of true AI-enabled personalised prevention, screening, diagnosis and treatment is here.

The UAE's National Artificial Intelligence Strategy 2031 aims to position the UAE as a global leader in AI by 2031 in areas such as healthcare, energy and tourism and hospitality¹⁰. AI has the ability to harness computing power and big data to identify patterns that enable personalised prevention, screening and treatment that is more effective and has better outcomes than current approaches – at less cost and at faster speed. Studies have shown that best prognosis of cancer survival is dependent upon how early it is detected, making data and AI very useful tools in increasing survival and early detection through identifying patterns, genetic anomalies and trends that are more commonly detected at a later stage. This is critical for improving patient outcomes in the UK and the UAE,

by allowing for prompt initiation of treatments when the disease is more likely to be treatable.

Big Data and AI also enable the development of personalised cancer prevention, screening and diagnostics strategies based on individual patient characteristics such as genetics, lifestyle factors and medical history. The tailoring of screening protocols and diagnostic tests to each patient's individual profile allows healthcare providers to improve cancer detection and optimise administration of the most appropriate treatments, minimising the use of additional or unnecessary testing and procedures.

AI-derived data can help relieve the pressure on healthcare providers and increase meaningful and efficient interactions between healthcare providers and patients. More importantly, this would alleviate the challenges that medical professionals face when making life-changing clinical decisions.

Increasing investment in healthcare infrastructure in the UAE and the continued development of existing electronic healthcare record systems such as RIAYATI, MALEFI and NABIDH (see Glossary) can help reinforce cybersecurity measures, modernise the healthcare IT infrastructure, and improve alignment and compliance with internationally recognised best practice in data management, including that of the UK.

7c | Data Adequacy

'Adequacy' is a term that the UK and the EU use to describe other countries, territories, sectors or international organisations that it deems to provide an 'essentially equivalent' level of data protection to that which exists within the UK and EU. An adequacy decision is a formal decision made by the UK or the EU which recognises that another country, territory, sector or international organisation provides an equivalent level of protection for personal data as the UK or EU does¹¹. Presently, the UAE is not on the 'data adequacy' list, and in order to support the facilitation of bilateral health data exchange, the UK and UAE should work together to achieve recognition of the UAE's federal data regime as adequate. ●

¹⁰News (uaecabinet.ae): <https://uaecabinet.ae/en/details/news/uae-cabinet-adopts-national-artificial-intelligence-strategy-2031>

¹¹Adequacy | ICO: <https://ico.org.uk/for-organisations/data-protection-and-the-eu/data-protection-and-the-eu-in-detail/adequacy/>

8 | Supportive and Palliative Care



Supportive care in cancer is the prevention and management of the adverse effects of cancer and its treatment. This includes management of physical and psychological symptoms and side effects across the continuum of the cancer experience from diagnosis, through anti-cancer treatment, to post-treatment care. Enhancing rehabilitation, secondary cancer prevention, survivorship and end of life care are all integral to Supportive Care.

Palliative care is defined by the World Health Organisation as an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and holistic assessment and treatment of pain and other problems, physical, psychosocial and spiritual.

As populations grow and age, more financial resources will be needed to overcome the challenges of providing adequate supportive and palliative care for patients. In the UK, palliative care is part-funded by the charitable sector, through hospices, private and public funding, with the NHS playing a central role in providing and coordinating these services. Charitable organisations can provide services and support in areas where government provision may be limited or insufficient. There is limited availability of publicly funded supportive and palliative care in the UAE, and, as the population ages, it could learn from the UK on how to scale palliative care up, make it more affordable and improve access to palliative care under medical insurance coverage.

In most private medical insurance models in the UK and UAE, palliative care is not a component that is covered within these

policies, creating barriers for patients who are economically or geographically unable to access these services and care. In order to overcome these barriers, insurance providers in the UK could share knowledge and best practice with their UAE counterparts on providing palliative care within certain insurance policies and the benefits to doing so.

8a | The Role of Culture and Faith

The UK and the UAE are both culturally diverse, with populations that include people from various ethnic, cultural and religious backgrounds. Cultural beliefs, practices and attitudes regarding death, dying and end-of-life care can vary widely among these communities, therefore additional considerations are needed when approaching these issues. An approach advocating a strong emphasis on patient autonomy, individual preference and pro-choice in healthcare decision-making allows for healthcare providers to educate and engage patients, their carers and families in a culturally sensitive manner about treatment, and end-of-life preferences. Palliative care is about improving the quality of life for the patient and not, as wrongly perceived, giving up on the patient.

The palliative care system in the UK uses a multi-disciplinary approach to ensure that patients receive holistic care that addresses and includes physical, emotional, social and spiritual support, whilst taking into consideration their cultural and religious beliefs. Wider community engagement with religious leaders, NGOs, local charities, academic institutes, public health centres and cultural organisations are also helpful in raising awareness about palliative care, and more importantly, address the cultural and religious stigmas and misconceptions that can accompany it.

However, more can be done to increase cultural competency, diversity and awareness among healthcare providers and translators in the UK at an academic and vocational level.

Islam plays a crucial role in shaping attitudes towards death, dying and end-of-life care in the UAE. Teachings of the Islamic faith as outlined in the Holy Qu'ran emphasise values of compassion, dignity and respect for the elderly and the dying, as well as the role of family, their involvement and community support for terminally ill patients. The role of family in Islam and in the UAE means that they are heavily involved in the decision-making and caregiving, as they play a central role in providing emotional support and comfort to the patients, rather than "outsourcing" this to an external provider. The UAE is a diverse nation which champions inter-faith tolerance amongst its population. Providing appropriate supportive and palliative care provision tailored to individual cultural and religious preferences will strengthen the nation's status as a leader in the region for end-of-life care.

8b | Capacity-Building and Skills

As populations in both the UK and UAE age and the incidence of cancer, chronic disease and other life-threatening illnesses increases, there will continue to be a growing demand for palliative care specialists and related services. In the UK palliative care is now a necessary prerequisite for cancer centres gaining ESMO (European Society of Medical Oncology) designated cancer centre accreditation.

By developing specialist skills and building capacity within the healthcare workforce both countries will be able to meet the growing demands for these specialists and services, ensuring that there are enough trained professionals to provide high quality palliative care to patients and their families.

Specialist palliative nursing services in the UK, such as Macmillan Nurses, offer a model for developing a parallel nursing service for end-of-life care in the UAE. Palliative care needs to be effectively promoted as an attractive career pathway for healthcare professionals, adapting to the cultural sensitivities of the local population and ensuring all patients gain access to up to date symptom control.

There is a lack of established home-based care clinical pathways for palliative care provision in the UAE. This is multi-faceted with focus areas on staff competencies outside a hospital environment, multi-professional support networks and access to medications in a safe and timely way. The UK could share its own expertise in this area with the UAE.

The COVID-19 pandemic shifted the manner in which patients were able to access medications and medical

advice globally, allowing for the introduction and development of remote models of medical consultancy and care in order to address patient medical needs during lockdowns. At present, these models continue to be used to alleviate pressures on healthcare professionals and provide one-to-one care in the comfort of one's own home. This model is especially useful within palliative care as it reduces the need to go to a hospital, which can sometimes be a stressful endeavour, and treatments and consultations can be administered at the convenience of the patient. This may however, also present certain barriers to digitising palliative care such as the perception that palliative care delivered digitally is a less personalised and less empathetic service than in-person care. The UK and UAE could collaborate to improve their respective remote healthcare models to make them more patient-centred, with the added benefit of creating some crisis resilience should another Covid-19 type pandemic compel health professionals to deliver more healthcare digitally.

8c | Case Study 4: Blüm Health - Digital Delivery of Palliative Care

Blüm Health is an industry leader in supporting care transformation through digital technologies.

They work closely with Pal¹² an evidence-based digital palliative care tool, to enable the early integration of palliative care into the patient's care journey.

If delivered early, palliative care can lead to a lower symptom burden, reduced risk of re-hospitalisation, a better quality of life, and longer life expectancy. However staff shortages in the healthcare system, high costs and inefficient care practices often lead to delayed access or lack of access to palliative care. This leaves families to manage the complex medical and practical needs of the patient and navigate a high-risk environment, unequipped with the right tools. This results in a cycle of inefficient, delayed, and reactive care, leading to frequent emergencies and repeated interventions, and a lower quality of life for the patients.

The Pal digital care tool provides families with the comfort, support, and know-how of palliative caregiving at home, and complements the care provided by healthcare teams. Pal provides them with a real-time view of how the patient is doing at home, and how their symptoms are progressing, which allows for more proactive care and timely interventions. The efficiency gains and time savings for clinicians mean they could manage up to 43% more patients, nearly doubling their capacity for delivering high-quality home-based palliative care. This ultimately translates to better-managed symptoms, fewer complications and hospitalisation, and an overall improved quality of life. ●

¹²Pal: <https://www.palhelps.com/>

9 | Recommendations

This paper proposes the following recommendations for fostering closer UK-UAE collaboration in cancer care. Most of the recommendations require a collaborative approach from government, the business community, academia and healthcare organisations. Some of the recommendations will be for the two Governments alone to take forward and we encourage them to consider these recommendations at the next UK-UAE Ministerial Joint Economic Committee Meeting. The UAE-UK Business Council will track progress on these at six-monthly intervals following the publication of this Paper.

1 | The UK and the UAE should exchange expertise on upskilling all healthcare professionals on new approaches to screening and diagnostics so that they are able to utilise new technologies in this field effectively.

2 | The UAE and the UK should collaborate on developing and implementing effective and culturally sensitive cancer awareness campaigns, and on leveraging AI and other technologies to enhance the accessibility, affordability and quality of screening and diagnostics, and to improve success metrics as well. In parallel the UK and the UAE should exchange knowledge on behaviour/lifestyle change campaigns to strengthen cancer prevention in both countries.

3 | The UK and the UAE should exchange knowledge about emerging trends in AI in Healthcare (with a particular focus on cancer care), the potential opportunities for commercial collaboration, and the barriers that might hinder such partnerships from coming to fruition. The UAE-UK Business Council should deliver a campaign on this.

4 | The UAE and the UK should work together to develop a comprehensive and harmonised framework for collaborations concerning the use of the human genome in screening and diagnostics or research and development, whilst preserving the patient's right to privacy and access to medical insurance and treatment. In parallel the two countries should exchange knowledge on maximising the clinical impact and implementation of genomics. Regulatory barriers that might hinder collaboration between the UK and the UAE in genomics research and genetic testing should be removed without negatively impacting on ethical and privacy issues.

5 | The UK and the UAE should commit to negotiating Data Adequacy recognition so that healthcare data can be shared between both jurisdictions.

6 | In parallel, the UAE and the UK should agree a memorandum for joint use on data anonymisation across genomics and other health data.

7 | The UK and the UAE should share know-how (from palliative care providers, leading clinicians and relevant digital health companies) on the early integration of palliative and supportive care into a patient care programme, acknowledging the evidence base suggesting quality of life and survival benefits.

8 | The UK and UAE should share knowledge of introducing palliative medicine into the medical institutions in the UAE, enabling the UAE health sector to champion quality care for cancer and non-cancer patients.

9 | The UK and UAE should exchange know-how on their respective models of providing safe, responsive home-based care when appropriate for those patients wishing to remain at home. This includes sharing competency and operational pathways for staffing as well as pharmacy input and the role of the local medical providers.

10 | Medical insurers, care providers and patient groups in the UK and the UAE should develop a dialogue to discuss the challenges and opportunities arising from inclusion of palliative and supportive care provision in health insurance policies.

11 | The UK and the UAE should exchange know-how from research programmes and trials on providing patient-centred digital palliative and supportive care provision and identify and assist companies that could provide relevant services.

12 | The UK and the UAE should develop a Healthcare Tech Hub to facilitate innovation between both countries.

13 | A UAE-UK Healthcare Leaders Forum should be established to meet twice a year to review progress against these recommendations and propose further recommendations to enhance bilateral collaboration in cancer care. ●

10 | Conclusion

Cancer care provision in the UK and the UAE is going through a period of immense change, driven by rapid technological innovation, demographic changes and an evolving regulatory and data environment, as well as new approaches to patient care, particularly in palliative care.

With the UK's strengths in academic research, and the UAE's significant investment in AI and genomics, both nations will benefit from fostering new commercial collaborations and establishing new partnerships between academia, business, government and the charitable sectors to overcome the challenge of the growing incidence of cancer.

A robust, well-regulated data framework that encourages the exchange of data between the UAE and the UK in an ethical manner that protects the privacy of patients, is essential to unlocking and harnessing the power of AI and other new technologies to revolutionise provision of oncology treatment and improve patient outcomes.

The strongest opportunities for partnership between the UAE and the UK in the cancer care sector lie in screening and diagnostics, data sharing and palliative care, and, if the regulatory barriers impeding commercial collaboration can be addressed, the two countries can work together to improve cancer care globally, as well as within their own domestic markets.

ANNEX 1 – Campaign Participants:

We are very grateful to representatives of the following organisations for participating in this campaign and providing their insights and expertise:

Abu Dhabi Public Health Centre: <https://www.adphc.gov.ae>

Al-Tamimi & Co.: <https://www.tamimi.com>

Blum Health: <https://www.blumtechgroup.com>

Browne Jacobson: <https://www.brownejacobson.com>

Burjeel Medical City: <https://www.burjeel.com>

Cambridge Innovation Capital: <https://www.cic.vc>

Department for Business and Trade (DBT): <https://www.gov.uk/government/organisations/department-for-business-and-trade>

Dubai Health Authority: <https://www.dha.gov.ae>

Friends of Cancer Patients: <https://www.focp.ae>

GSK: <https://www.gsk.com>

Guys & St. Thomas NHS Foundation Trust: <https://www.guysandstthomas.nhs.uk>

Institute of Public Health, United Arab Emirates University https://www.uaeu.ac.ae/en/cmhs/departments/public_health_institute.shtml

IQVIA: <https://www.iqvia.com>

IROS – an M42 Co.: <https://www.iros.ai>

New Statesman Media Group: <https://www.newstatesmanmedia.com>

Pink Caravan: <https://www.focp.ae/our-programs/womens-health/>

Royal Marsden: <https://www.royalmarsden.nhs.uk/>

Supportive Care UK: <https://www.supportive.care/>

UAE University: <https://www.uaeu.ac.ae>

UCLH: <https://www.uclh.nhs.uk>

UKIHMA: <https://www.ukihma.co.uk>

United Al Saqer Group: <https://www.alsaqergroup.com>

University of Cambridge: <https://www.cam.ac.uk>

**The content of this paper represents the opinions of the contributors and not necessarily their respective organisations or entities.

ANNEX 2 – Glossary

ESMO – European Society of Medical Oncology

GDPR – General Data Protection Regulation

HIE – Health Information Exchange

ICT – Information and Communication Technology

IFHAS – the UAE's comprehensive national cancer screening programme

MALAFFI – Abu Dhabi Health, a Digital HIE Portal

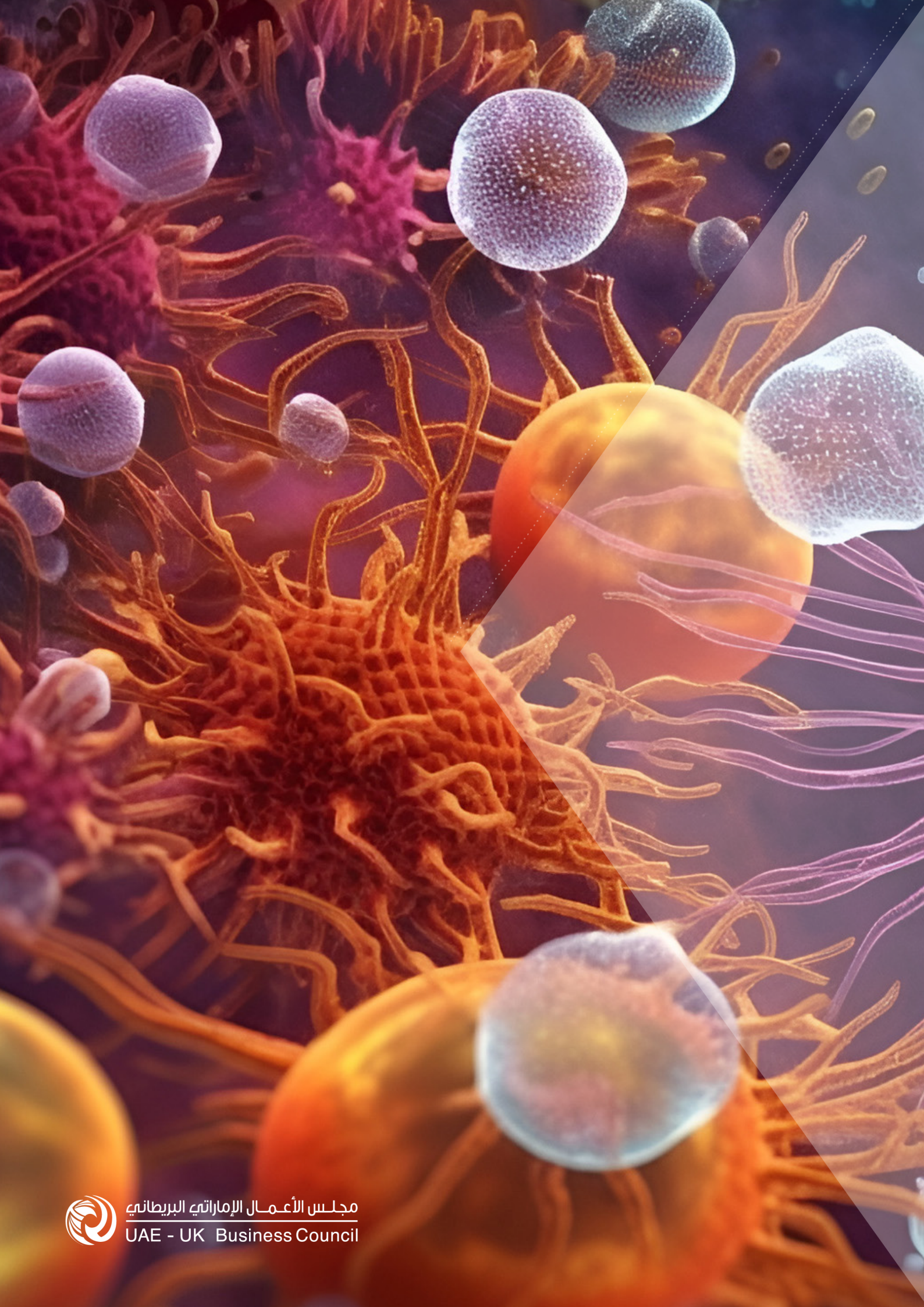
NABIDH – A Healthcare Platform that securely connects public and private facilities in Dubai to share trusted healthcare information.

NCRAS – National Cancer Registration and Analysis Service

NDRS – National Disease Registration Service

RIAYATI – Digital Healthcare Platform for the National Unified Medical Record (NUMR) Programme

WHO – World Health Organization ●



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