

Harnessing the power of veterinary cancer registries in veterinary care



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**When you first think about cancer data...
what comes to mind? What is your gut feeling?**



"What's the point of spending hours for extracting and re-organising data?"



A young woman with dark hair and glasses stands in the center of a busy city street. She is wearing a white long-sleeved blouse with a black bow at the neck and a dark, knee-length skirt. The background is filled with blurred figures of people walking, suggesting a crowded urban environment. The lighting is bright, indicating daytime.

**Behind every
data point is a
person**



Cancer data isn't meaningless. It's powerful.

Research in Veterinary Science 193 (2025) 105754

Contents lists available at ScienceDirect

Research in Veterinary Science

journal homepage: www.elsevier.com/locate/rvsc



Beyond the clinic: Unlocking the power of cancer data in companion animals

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Cancer data are critical for CANCER SURVEILLANCE



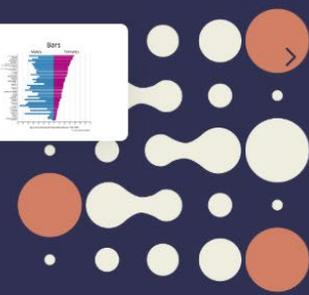
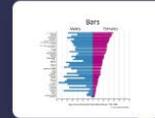
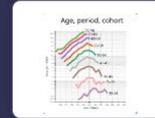
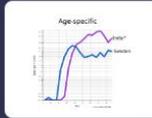
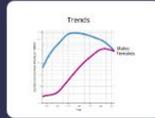
Cancer data are also critical for **CANCER PREVENTION**



CANCER OVER TIME

Cancer Over Time

Predict the future cancer incidence and mortality burden worldwide up until 2040.



IARCWHO @GLOBOCAN_GCO Feb. 4, 2025 #WorldCancerDay

Analysis of variations in lung cancer incidence over time shows lung adenocarcinoma emerged as the predominant subtype in recent years, with increasing risks observed among younger generations in most countries assessed.

@LancetRespirMed



<https://gco.iarc.fr/en>

The mystery rise of lung cancer in non-smokers

6 June 2025

Share Save

Theres Lüthi



The number of lung cancer cases in people who have never smoked is increasing. The disease is different from lung cancer caused by smoking, so what causes it?

Lung Cancer Is Rising in Non-Smokers, And This Could Be Why

HEALTH 15 February 2025 By DAVID NIELD



(d3sign/Moment/Getty Images)

Translated to the veterinary field.... What cancer data can tell us?

- Tumour types and breed predispositions
- Age, sex, and lifestyle risk factors
- Treatment effectiveness over time

It's not just data collection — it's **data activation.**

A woman with glasses and a white top is sitting on a light blue sofa, reading a book. She is wearing a patterned blanket and white socks. The sofa has a yellow pillow and a blue and white striped blanket. In the foreground, a brown curly dog is lying on a striped rug. A large green plant is on the left side of the frame. The background shows a modern living room with a white wall and a black lamp.

Cancer data are critical for **CANCER EPIDEMIOLOGY** studies

Our pets don't just live with us. They live *like* us.

Pollution and Environmental Cancer Causes

By [Scott Nichols, MS, DVM](#)

✓ Medically Reviewed by [Stephanie Evenson, DVM, MS, cVMA](#)

updated on January 29, 2024 | read time is about 5 minutes

Nowadays, humans and dogs share their living space and so our pets are exposed to many of the same environmental pollutants as we are, like tobacco smoke, smog, paints and pesticides. Fortunately, our pets' risk is reduced when we take steps to reduce our own risk of exposure, and the incidence of cancer in pets from pollution is still very low.

Research in Veterinary Science 184 (2025) 105517



Contents lists available at [ScienceDirect](#)

Research in Veterinary Science

journal homepage: www.elsevier.com/locate/rvsc



Environmental exposure and cancer occurrence in dogs: a critical appraisal of evidence.

Kei Owada ^{a,1}, Emma Nicholls ^{b,1}, Ricardo J. Soares Magalhães ^{a,c}, Chiara Palmieri ^{b,*}

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Dogs exposed to household chemicals more likely to get cancer, study finds

Markers of bladder cancer found in canines with higher levels of exposure to chemicals such as flame retardants



Check for updates

If data is so powerful, why don't we have already lots of cancer data on domestic animals already?



Well, that brings us to one of the most critical tools for cancer data collection:

Cancer registries

What is a cancer registry?

“Organisation for the systematic collection, storage, analysis, interpretation and reporting of data on subjects with cancer”

The patient



Patient's data is created and collected



Standardised data in a storage central system



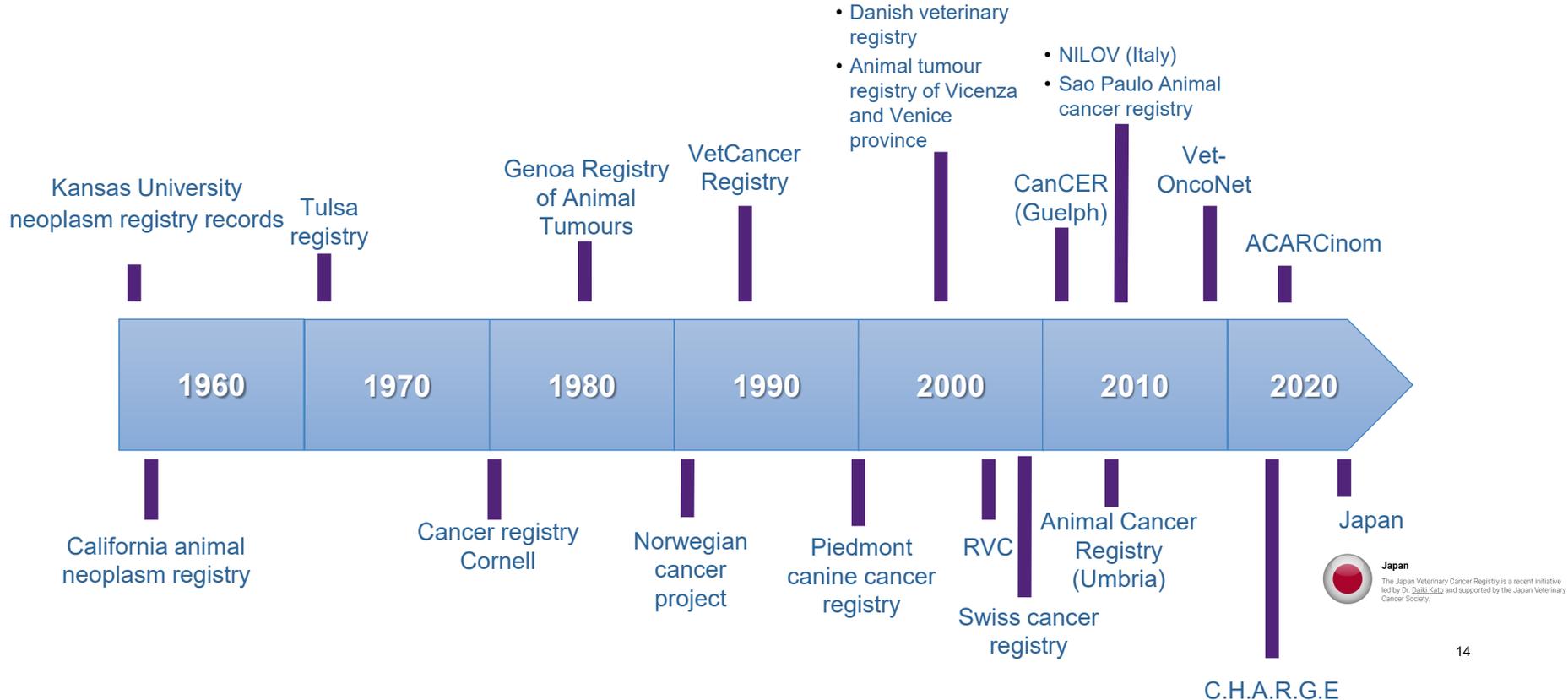
Data used to inform and improve a range of functions (epidemiological research, health care planning and monitoring, screening, prevention and control)



Data sent to the cancer registry system

15

Veterinary cancer registries: encouraging examples we can learn from



Challenges in establishing veterinary cancer registries

- 1) LACK OF DENOMINATOR AND CENSUS DATA
- 2) SUSTAINABLE STRUCTURAL RESOURCES and COMMITMENT
- 3) COMPLETENESS OF REPORTING



**LOCAL
CHALLENGES**

Challenges in establishing veterinary cancer registries

1) UNIFORMITY IN THE DIAGNOSTIC TERMS

Standardisation efforts



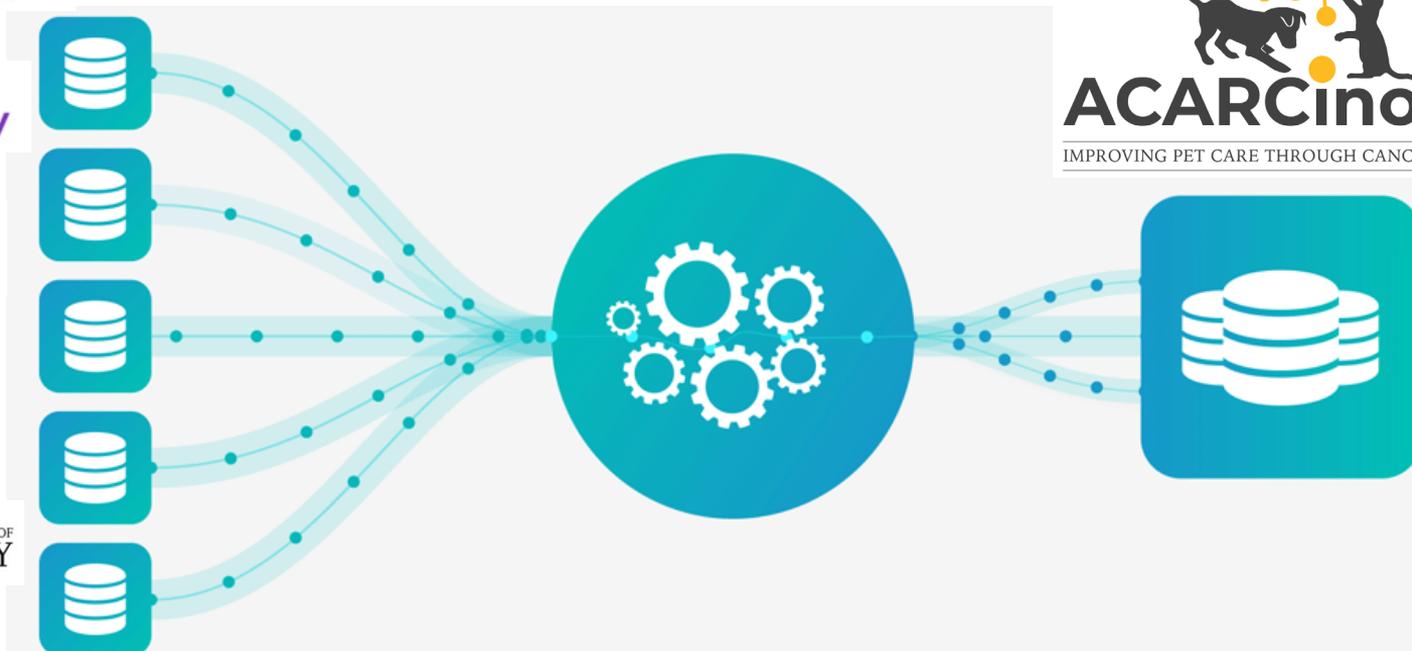
2) LACK OF GUIDELINES AND STANDARDS

- No standardised approach to cancer registration
- Different methodologies and inclusion criteria
- “comparability”
- Standardised definition of minimum requirements



**GLOBAL
CHALLENGES**

We overcame some of these challenges building the Australian Companion Animal Registry of Cancers (ACARCInom)





ACARCinom data requirements

Ref_No, Patient_ID, Postcode, Request date, Species, Breed, Sex, Castration status, DOB or age, Diagnosis, Topography, Grade, Certainty, Metastases



Inclusion criteria

- Cancer cases only
- Histopath
- Dogs, cats
- Necropsies, biopsies



Analysis data format

Small dataset from each data provider > definition of data extraction and transformation



Data dictionary (vocabulary)

Dictionary for:

- Topography
- Diagnosis
- Grading
- Breeds
- Postcode
- Level of certainty

ACARCinom Pre-development



Guidelines for “exceptions”

Rules for registering multiple tumours in the same location, multiple tumours in different locations, systemic tumours

ACARCI nom Development

ACARCI nom data parsing system

Data source: UQv1 Reference code: 21/0141

Pit Bull Terrier DOB: 02/12/2016

Source: UQ_2021_raw data_0.1.xls Row: 55

Morphologic diagnosis: 1: 'Left 3rd eyelid mass': Epitheliomatous sebaceous (meibomian gland) carcinoma

FINAL DIAGNOSES: Meibomian gland carcinoma, preference for epitheliomatous sebaceous carcinoma

Parser results

✳ **Diagnosis:** Meibomian gland adenocarcinoma (8410.1/3)

✳ **Primary topography:** Eyelid (C44.1)

♣ **Metastasis topography:**

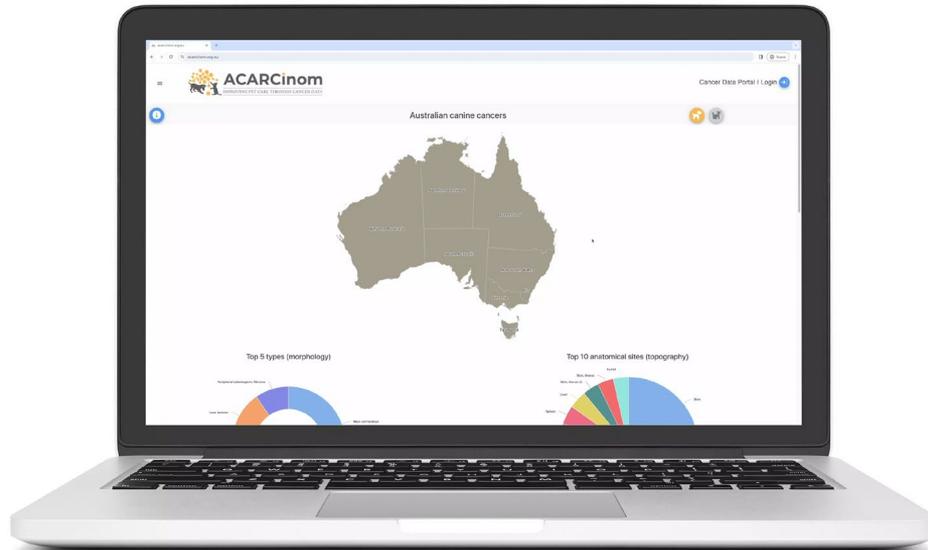
♣ **Certainty level:** High

📶 **Grade:**

3) Result presentation after marking up the report text with HTML tags;

ACARCI^{nom} updates

Since January 2024 more than 10000 coded records have been processed.
Summary of the data publicly accessible on the ACARCI^{nom} dashboard



- Processing thousands of reports per minute with minimal human intervention
- Decades of historical and prospective cancer data can now be processed and made available for diagnostic and research purposes.

Why having cancer data is so important for our pets, for veterinary professionals and for scientists?

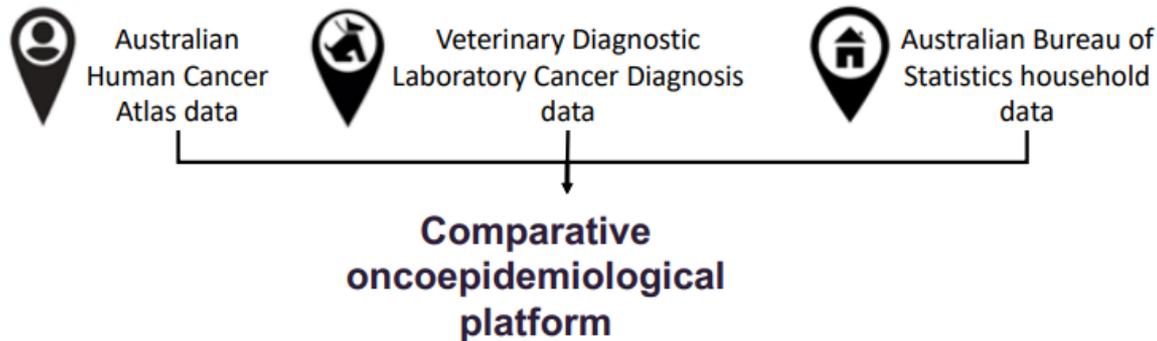
The potential of big data in pet cancer science and care is absolutely huge!

- 
- Improving diagnostic procedures
 - Prevention
 - Monitoring
 - Redirection of resources
 - Treatment response

**BY GETTING TO KNOW
WHAT IS MORE
COMMON, WE BEGIN TO
UNDERSTAND WHY!**

The potential of using cancer data in veterinary epidemiology studies...

- Opportunity to “map” tumours and identify cancer hot spots
- Link with environmental data (e.g. air pollution, proximity to industrial areas, etc)
- Co-localisation with human cancer cases (shared risk paradigm)



Call to action

- Support data collection initiatives
- Encourage clinic participation in registries
- Educate pet owners on the value of data
- Create networking opportunities between registries, data systems and institutions working in the field of veterinary oncoepidemiology



**Behind every data point
is a paw, a heartbeat, and
a story**



How to access ACARcinom

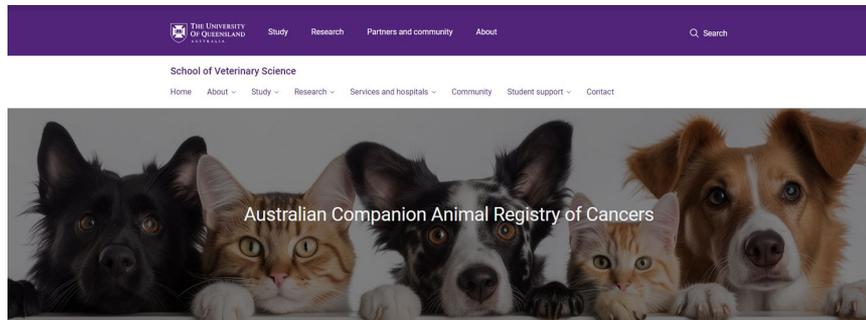


Australia's first
national registry of
cat and dog cancers,
backed by real-time data.



acarcinom.org.au

acarcinom.org.au



<https://veterinary-science.uq.edu.au/australian-companion-animal-registry-cancers>



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Australian Companion Animal Registry of Cancers (ACARcinom)
Pet cancer database
Supported by ARDC
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Thanks to all the people behind the scene!

Victor
Master student
(risk factors of mammary cancer in dogs and cats)

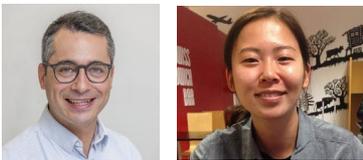


Alistair
(DVM)
(Cancer occurrence in Golden retrievers)

Mifta
MPhil student
(air pollution and lung cancer in dogs)

Ticiana
DVClinSc student
(risk factors and computational pathology of canine prostate cancer)

Prof Ricardo Soares Magalhaes and Dr Kei Owada
(oncopedemiology of cancer in dogs)



A/Prof Carlos Eduardo Fonseca Alves and Prof Renee Lauder Amorim
(canine prostate and bladder cancer)



Prof Yinyin Yuan and Dr Simon Castillo
MD Anderson Cancer Center
(AI and cancer)



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Global Initiative for Veterinary Cancer Surveillance

Thank you for listening today!

-  ACARCinom.petcancerdata@gmail.com
-  <https://www.linkedin.com/company/acarcinom-pet-cancer-registry>
-  <https://veterinary-science.uq.edu.au/australian-companion-animal-registry-cancers>
-  acarcinom
-  Australian Companion Animal Registry of Cancer - ACARCinom



The ACARCinom project (<https://doi.org/10.47486/DP713>) received investment from the Australian Research Data Commons (ARDC). The ARDC is funded by the National Collaborative Research Infrastructure Strategy (NCRIS).

