

Sustainability in Veterinary Medicine

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The image shows two news articles side-by-side. The left article is from The New York Times, titled "Earth's 10 Hottest Years on Record Are the Last 10". The right article is from the IPCC, titled "State of the Global Climate 2024".

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Climate Crisis =
Health Crisis

A photograph of a person standing on a balcony, looking out at a city skyline obscured by a thick, hazy atmosphere, likely representing air pollution or smog.

3

Climate Crisis =
Health Crisis
^AANIMAL

A photograph of a dog standing on a beach, looking up at a hazy, orange-tinted sky, suggesting the impact of climate change on animals.

4

A lit match with a yellow flame. The words "CLIMATE CHANGE" are written in black on the flame. The matchstick has the words "ANIMALS", "POOR PEOPLE", and "AIR PEOPLE" written on it.

5

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1. Connection between profession and environment
2. Framework for more sustainable clinics
3. Opportunities for action and engagement

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Environment → Animal Health



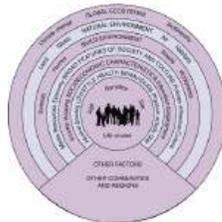
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Environment → Animal Health



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Environment → Animal Health



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Renewed Concern: Profession

Climate Change and Veterinary Medicine: Action is needed to retain social relevance

Craig Stephen, Maud Camon, Barry Steneshorn



Veterinarians in a Changing Global Climate: Educational Disconnect and a Path Forward

Colin G. Baxter, Raffaele A. McCarroll, Zil Zaretsky and Colleen G. Dunbar



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Renewed Concern: Profession

- Elevated concern
- Animal health threat → future
- Lack of educational programming
- Importance of 'learning by doing'



EDUCATIONAL RESEARCH REPORT

Preparing Veterinarians to Address the Health Impacts of Climate Change: Student Perceptions, Knowledge Gaps, and Opportunities

Alex F. Johnson, James C. Harrison, Ellen S. Sorenson, Wade H. Gully, Thomas G. Galbreath, Colin E. Casson, Wendy H. Decker, Shy D. Karanikola, Barbara S. Bolmer, Ashley L. Johnson, Colleen Steneshorn

Environmental Sustainability in Veterinary Medicine: An Opportunity for Teaching Hospitals

Stephanie C. M. Johnson, Egan M. Sord, Richard P. Thompson, Marlene Sorenson, Tracy L. Webb, Peter J. Carpenter, Blake Burger, Colleen G. Dunbar

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Renewed Concern: Profession

THE PLANETARY HEALTH REPORT CARD

An international health student community inspiring institutional change.

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Provision of Health Care

- Healthcare emissions worldwide: 1%-5% of global total
- USA:
 - ~7-10% GHG emissions
 - 12% acid rain
 - 10% smog formation
 - 9% criteria air pollutants
 - 1% stratospheric ozone depletion
 - 1-2% carcinogenic & non-carcinogenic air toxics
 - 470,000 DALYs lost from pollution-related disease
- **No correlation between footprint & health outcomes**



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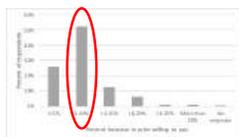
Renewed Concern: Clients



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Renewed Concern: Clients

- Pet health concern
- Veterinary teams: knowledge programs
- Value teams with specialty training



Client Choice May Provide an Economic Incentive for Veterinary Practices to Invest in Sustainable Infrastructure and Climate Change Education



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Sustainability

'Maintaining the earth's environmental quality, functionality, and services to meet the human needs of today without compromising the needs of future generations'
 - UN Brundtland Commission, 1987

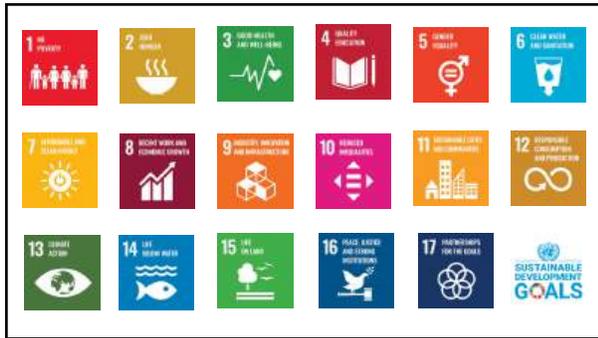
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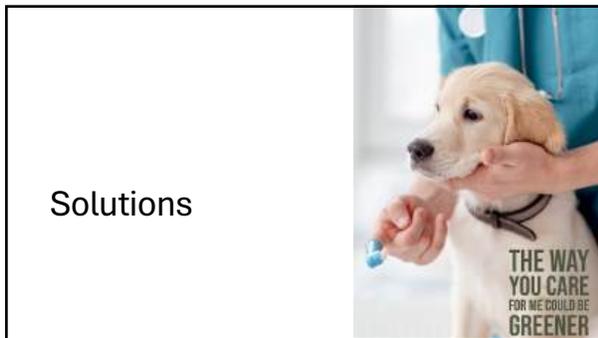
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Research Article
A Systematic Review of Environmental Sustainability in Veterinary Practice
 Maria E. Bapathevar¹, Leah K. Sauerbreit², Tracy L. Wehm³, Stacy A. Baumgart⁴,
 Sallie A. Steele⁵, Celina C. Duncan⁶

ENERGY
 WASTE
 WATER
 PROCUREMENT
 TRANSPORTATION

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Energy: Use Clean

POWER YOUR TEAM IN A RENEWABLE WAY

Veterinary Sustainability Alliance

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Energy: Use Less & Use Electric

How Health Care Organizations Can Use the Inflation Reduction Act to Reduce Costs, Enhance Resilience, and Lower Their Environmental Footprint!

Celena Bapathevar, PhD, MS, Health Care Vertical Farm, Ford Scanlon, MBA, OSHA/Health and Safety, Planning and Metrics Working Group of the National Academy of Medicine
 Astria Collaborative on Accelerating Ball's Health Sector
 November 29, 2023

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Waste

- Trash is unavoidable → **WASTE LESS**
- Hospitals:
 - ~1% of solid waste in developed countries
 - ~1/3 originates in operating rooms
- Fate of waste variable by location
- Medical waste: non-hazardous vs hazardous
- Co-benefits
 - Team goals
 - Reduction & better waste segregation → \$\$\$ savings

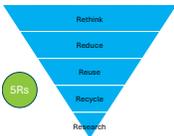
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 **Waste**

Waste not want not: piloting a clinical waste audit at a United States university veterinary teaching hospital

Claudia M. Ross-Aditya BA, Melissa A. Hollibaugh MS, Tracy S. Moulton MS, Vicki L. Conner MS, Nancy Neaseggen MS, Gregg M. Duffield MS, DVM, and Colleen Strouse DVM, PhD

DOI: <https://doi.org/10.2400/revs.221112495>





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 **Waste: Reduce**

- Human ORs: ~80% generated before patient arrival
- Surgery specific supply pick lists → ~45% reduction/case
- Reuse programs for send home equipment




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 **Waste: Reuse**

- Cloth clothing & drapes as appropriate
 - Surgical site infection research
 - Laundry: logistics, water, energy
- Sterilization containers vs. blue wrap
- Reusable sharps containers
- Reusable warming blankets
- Other opportunities
 - Training instruments
 - Creative clinical applications



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 **Waste: Recycle**

- NEVER step 1 !!!
- Education
 - Local/regional options
 - "Wishcycling"
- Expanded opportunities
 - Hard to recycle depots/shipping
 - Closed loop systems
 - Partnerships with human hospitals
- Switch → Biodegradable products



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 **Waste: Research**

- Veterinary medical specific gaps → solutions
 - Nature and quantity by sector
 - Collaborative audit activities
- Collaboration with human health sectors
 - Areas of overlap: Medical/surgical
 - Areas of difference: biologic waste % human food
- Behavior change research → support



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 **Pharmaceutical Waste**

- Responsible use of medicines
 - Antimicrobial & antiparasitic drugs → AMR
 - Emerging issues in ecotoxicology
- Avoid wastage: inventory management
- Drug distribution
 - Off site use/disposal
- Containers
 - Plastic
 - Recyclable (metal, paper)
 - Biodegradable




Cattle Drug Threatens Thousands of Valleys

Pet flea treatments poisoning rivers across England, scientists find

Researcher's study links pet flea treatments to pollution in rivers

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Pharmaceutical Waste

Veterinary anesthesia: an opportunity to reduce the environmental footprint of clinical care

Lindsay Viole, MS, Josely Quintana, MS, Valeria Sanchez, MS, Daniela Scott, MEdD, DVM, Gregg H. Driffenbagen, DVM, MS, Colleen Duncan, DVM, PhD

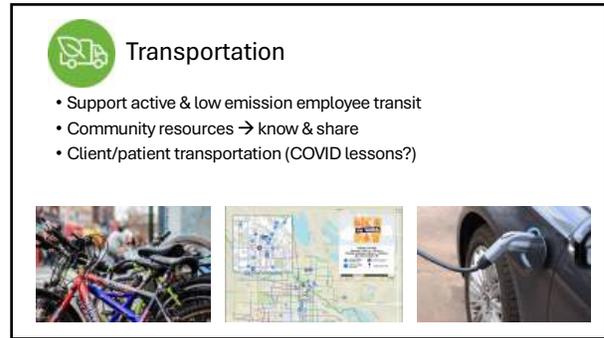
April 2 LiveStream - 1 CE Hour - **Inhaled Anesthesia Impact on the Planet**

Join us for a liveStream program on April 2 from 8:30 - 9:30 PM (via Zoom) with Dr. Gregg Driffenbagen to learn about the impact of inhaled anesthetics on the planet. Our liveStream will be available through May 31.



Register

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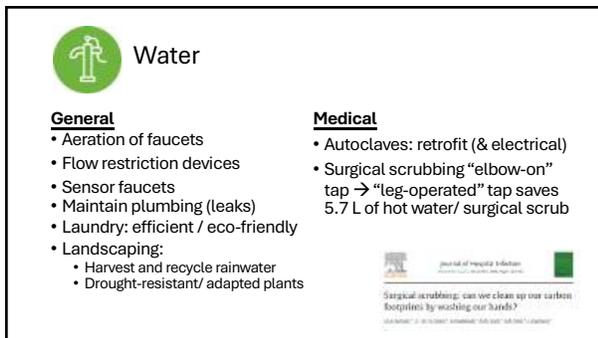


Transportation

- Support active & low emission employee transit
- Community resources → know & share
- Client/patient transportation (COVID lessons?)



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Water

General

- Aeration of faucets
- Flow restriction devices
- Sensor faucets
- Maintain plumbing (leaks)
- Laundry: efficient / eco-friendly
- Landscaping:
 - Harvest and recycle rainwater
 - Drought-resistant/ adapted plants

Medical

- Autoclaves: retrofit (& electrical)
- Surgical scrubbing “elbow-on” tap → “leg-operated” tap saves 5.7 L of hot water/ surgical scrub



Surgical scrubbing: can we clean up our carbon footprints by washing our hands?

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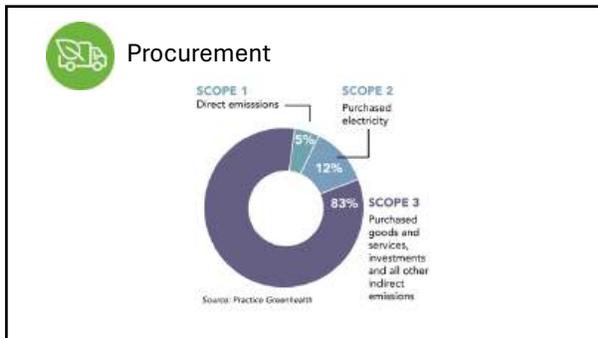


Procurement

“**Every time you spend money, you’re casting a vote for the kind of world you want.**”

- Anna Lappé

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Procurement: Policies

Colorado State University Policy Library

CSU POLICY: ENVIRONMENTALLY AND SOCIALLY RESPONSIBLE PROCUREMENT

PURPOSE OF THIS POLICY

APPLICATION OF THIS POLICY

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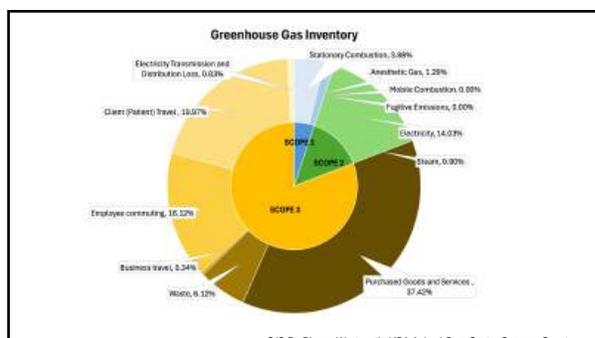
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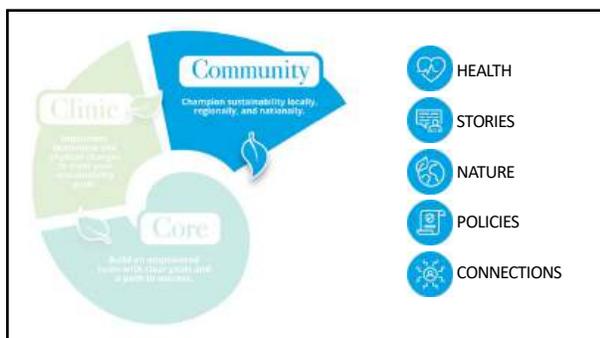
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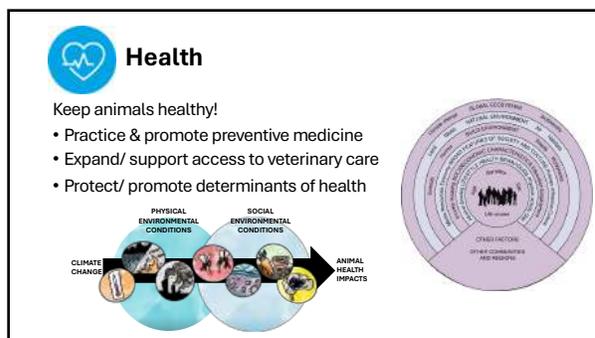
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PLOS ONE

RESEARCH ARTICLE

Environmental impacts of food consumption by dogs and cats

Gregory S. Okin*

Department of Geography, University of California Los Angeles, Los Angeles, California, United States of America

USA dog & cat diets = X cars on road???

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Health

- Footprint of companion animals
- Feeding
 - Amount: obesity
 - Type: humanization of pet food
- Breeding
- Preventing breeding ☺



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Stories

A public health frame arouses hopeful emotions about climate change

You are an EXCELLENT messenger!

Reframing climate change as a public health issue: an exploratory study of public reactions

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Stories

PETfood

APPA: 51% of pet owners willing to pay more for ethical, sustainable products



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Stories

CLEAN DIRTY

Veterinary Clinic



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Policies

Empowering Veterinarians to Be Planetary Health Stewards Through Policy and Practice
(Shaw-Klein, William E. Barbour and Debbie Dawson)

Climate change and related sustainability issues

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Policies

- Engage → ensure animal health is prioritized
- Veterinary involvement in emerging markets
- Ensure that gains in efficiency → OVERALL impact reductions
- Recognize short / medium / long-term goals
- Awareness of consumer markets and veterinary/health related values

WPAV | EquiVetNews | Published: 18 February 2022
Animal welfare is a stronger determinant of public support for meat taxation than climate change mitigation in Germany
Strohle, Petra A | 18 October 2021
Health Care | 4, 963-969 (2021) | Clin. Infect. Dis.

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Nature

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Connections

Veterinary Sustainability Alliance

Vet Sustain for Climate Action

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THANK YOU

“The most effective way to get out of this mess is to educate ourselves”
 - Greta Thunberg

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