reporting, and verifying signals in the community, there is no standard CEBS for emerging or novel viruses affecting humans and their companion animals. We propose closely monitoring these urban human–animal interfaces using standardised One Health disease surveillance within households. Household transmission investigations (HHTIs)[6] have been successfully implemented to investigate human disease dynamics by collecting high-quality epidemiological, clinical, virological, and serological data in a well defined, closed setting. We propose expanding WHO's HHTI protocol[5,6] into a One Health HHTI, capturing companion animal data and characterising the interactions at the human–companion animal interface. The phased expansion requires veterinary public health expertise to revise and adapt protocols to include companion animals, develop multi-species case and contact definitions, and determine minimum data requirements for timely public health decision making. Once the One Health HHTI protocol is created, determining processes for specimen collection, analytics, and data governance is essential to ensure the cross-sectoral feasibility and sustainability of the approach. The One Health HHTI protocol is needed to address the full spectrum of disease control necessary for global health security.

We declare no competing interests.

*Adrian J Marcato, Niamh Meagher, Violeta Spirkoska, Alicia Arnott, Jodie McVernon, David J Price, *Juan-Pablo Villanueva-Cabezas*
**jp.villanueva@unimelb.edu.au**

Department of Infectious Diseases, Peter Doherty Institute for Infection and Immunity, The University of Melbourne, Melbourne, VIC 3000, Australia (AJM, NM, VS, AA, JM, DJP, J-PV-C); Centre for Epidemiology & Biostatistics, Melbourne School of Population & Global Health, The University of Melbourne, Melbourne, VIC, Australia (DJP); Victorian Infectious Diseases Reference Laboratory Epidemiology Unit, Peter Doherty Institute for Infection and Immunity, Royal Melbourne Hospital, Melbourne, VIC, Australia (AA, JM); The Nossal Institute for Global Health, The University of Melbourne, Melbourne, VIC, Australia (J-PV-C)

1 Yen HL, Sit THC, Brackman CJ, et al. Transmission of SARS-CoV-2 delta variant (AY.127) from pet hamsters to humans, leading to onward human-to-human transmission: a case study. *Lancet* 2022; **399:** 1070–78.
2 World Organisation for Animal Health. Cases of avian influenza in mammals. 2024. https://www.woah.org/en/disease/avian-influenza/#ui-id-2 (accessed March 28, 2024).
3 One Health High-Level Expert Panel, Adisasmito WB, Almuhairi S, et al. One Health: a new definition for a sustainable and healthy future. *PLoS Pathog* 2022; **18:** e1010537.
4 WHO. Quadripartite call to action for One Health for a safer world. March 27, 2023. https://www.who.int/news/item/27-03-2023-quadripartite-call-to-action-for-one-health-for-a-safer-world (accessed May 10, 2023).
5 WHO. "Crafting the Mosaic": a framework for resilient surveillance for respiratory viruses of epidemic and pandemic potential. March 8, 2023. https://www.who.int/publications/i/item/9789240070288 (accessed May 10, 2023).
6 Price DJ, Spirkoska V, Marcato AJ, et al. Household transmission investigation: design, reporting and critical appraisal. *Influenza Other Respir Viruses* 2023; **17**: e13165.

## Biodiversity and planetary health: a call for integrated action

In the face of escalating biodiversity loss, the imperative role of comprehensive research and conservation strategies has never been more pressing. The National Biodiversity Future Centre (NBFC) in Italy stands at the forefront of tackling biodiversity loss, pioneering innovative approaches within the Mediterranean's biodiversity hotspot. In this Correspondence, we aim to highlight the pressing need for synchronised efforts in protecting our planet's biological wealth, which is fundamental to sustaining life as we know it.

Biodiversity's influence extends to cultural and mental wellbeing, intertwined with cultural practices and contributing to identity and belonging. The need for cohesive strategies and the innovative, pivotal role of a centre on biodiversity research in the Mediterranean is crucial to advancing our understanding of monitoring, conservation, and restoration of biodiversity and to drive sustainable biological resource use.

Further research is essential as biodiversity is a cornerstone of wellbeing, providing essential resources and regulating services such as climate moderation, flood mitigation, and nutrient cycling, crucial for maintaining ecological equilibrium.[1] The connection between biodiversity, sustainable development, and planetary health becomes imperative as we face global diseases and environmental crises. Biodiversity loss endangers essential ecological services, affecting billions of people globally.[2] Environmental degradation and biodiversity loss contribute to a substantial portion of the global disease burden.[3] The emergence of infectious diseases underscores the necessity of preserving biodiversity for global health security, stressing the importance of adopting integrated strategies at various levels.[4]

The NBFC, established under the Post-Covid Recovery and Resilience Plan, is at the forefront of this endeavour. It advocates nature-based solutions to harmonise human requirements with biodiversity conservation, ensuring ecosystem services and preserving environmental resources that are essential for human survival and prosperity. The NBFC works in close synergy with institutions and private companies for the protection of the environment and the enhancement of biodiversity. In Italy and the Mediterranean, the rejuvenation of biodiversity is essential for sustainable development. Mediterranean biodiversity, a wealth of bioactive compounds, is crucial for pioneering treatments against non-communicable diseases. Natural substances are key in creating innovative health solutions that blend wellbeing with economic growth.[5]

The conservation of biodiversity is, therefore, not just a matter of environmental stewardship but a critical component in the continuing

For more on the **NBFC** see https://www.nbfc.it

advancement of pharmaceutical sciences and public health. The NBFC's integrated approach is pivotal as we face challenges of urbanisation and environmental degradation, focusing on enhancing biodiversity, fostering green jobs, and improving global health by integrating biodiversity and human wellbeing indices. Aligned with the European Resilience Plan and focusing on the youth, the NBFC is committed to ensuring future generations live in harmony with nature and achieve the Sustainable Development Goals. We trust that this Correspondence will underscore the importance of biodiversity in safeguarding not only our planet's health, but also the health and prosperity of its inhabitants.

We declare no competing interests. We extend our heartfelt gratitude to Giuseppe Remuzzi not only for sharing our vision and concerns, but also for his invaluable revision and unwavering support. The research is funded under the National Recovery and Resilience Plan by the European Union–NextGenerationEU (NBFC: Project code CN00000033; CUP: F13C22000720007).

*Hellas Cena, Massimo Labra, NBFC Collaborator Group†
**hellas.cena@unipv.it**

†Members of the NBFC Collaborator Group can be found in the appendix.

Laboratory of Dietetics and Clinical Nutrition, Department of Public Health, Experimental and Forensic Medicine, University of Pavia, Pavia 27100, Italy (HC); Clinical Nutrition Unit, General Medicine, Istituti Clinici Scientifici Maugeri IRCCS, Pavia, Italy (HC); Department of Biotechnology and Biosciences, University of Milano-Bicocca, Milano, Italy (ML)

1 Naeem S, Chazdon R, Duffy JE, Prager C, Worm B. Biodiversity and human well-being: an essential link for sustainable development. *Proc R Soc B Biol Sci* 2016; **283:** 20162091.
2 Díaz S, Settele J, Brondízio ES, et al. Pervasive human-driven decline of life on Earth points to the need for transformative change. *Science* 2019; **366:** eaax3100.
3 Bartlow AW, MacHalaba C, Karesh WB, Fair JM. Biodiversity and global health: intersection of health, security, and the environment. *Heal Secur* 2021; **19**: 214–22.
4 Schmeller DS, Courchamp F, Killeen G. Biodiversity loss, emerging pathogens and human health risks. *Biodivers Conserv* 2020; **29:** 3095.
5 Theodoridis S, Drakou EG, Hickler T, Thines M, Nogues-Bravo D. Evaluating natural medicinal resources and their exposure to global change. *Lancet Planet Health* 2023; **7**: e155–63.

See Online for appendix

## Immunotherapy in frail non-small-cell lung cancer patients

We read the study published by Siow Ming Lee and colleagues[1] with great interest. The authors concluded that atezolizumab monotherapy was associated with better outcomes for patients deemed ineligible for platinum-based chemotherapy. However, the study raised two substantial concerns regarding the heterogeneity of the study population and the single-agent treatment of the control group.

First, the trial combined frail and very frail patients with an Eastern Cooperative Oncology Group performance status (ECOG PS) 2 and 3 with a substantial number of fit (ECOG PS 0–1) older patients. These are three very distinctive groups who respond differently to treatment.[2] There was no difference between immunotherapy or chemotherapy in ECOG 2 (hazard ratio [HR] 0·86, 95% CI 0·67–1·10). The paper even stated that the median overall survival of ECOG PS 2 patients treated with chemotherapy was better than those treated with immunotherapy (9·7 *vs* 10·4 months). The question here is whether the benefit of the total group might be driven by the fit older patient ECOG PS 0–1 group.

Second, IPSOS investigators possibly deemed platinum-based therapy unsuitable for patients primarily by their performance score. A 2023 Cochrane review, with IPSOS data included, showed that patients with ECOG PS 2 should be treated with platinum doublet therapy first, not non-platinum monotherapy (HR 0·67 [0·57–0·78]), contrary to its use in this trial.[3] Furthermore, the observed crossing of the survival curve during the first months could be attributed to withholding chemotherapy in a substantial part of the atezolizumab group. Consequently, the findings from this study for patients with ECOG PS 2, should be interpreted with caution.

WHvG has unpaid roles for the European Respiratory Society and Dutch Association of Physicians for Pulmonary Diseases and Tuberculosis outside of the submitted Correspondence; and is a local investigator for clinical trials for MSD and Roche. HG declares grants or contracts from Roche and Boehringer Ingelheim; and consulting fees from Lilly, Novartis, Roche, Genentech, and AstraZeneca. All other authors declare no competing interests.

*Rolof GP Gijtenbeek, Anneloes L Noordhof, Oke D Asmara, Harry JM Groen, Wouter H van Geffen
**rolof.gijtenbeek@mcl.nl**

Department of Respiratory Medicine, Medical Center Leeuwarden, Leeuwarden 8934 AD, Netherlands (RGPG, ALN, ODA, WHvG); Department of Pulmonary Diseases, University Medical Center Groningen and University of Groningen, Groningen, Netherlands (HJMG)

1 Lee SM, Schulz C, Prabhash K, et al. First-line atezolizumab monotherapy versus single-agent chemotherapy in patients with non-small-cell lung cancer ineligible for treatment with a platinum-containing regimen (IPSOS): a phase 3, global, multicentre, open-label, randomised controlled study. *Lancet* 2023; **402:** 451–63.
2 Sehgal K, Gill RR, Widick P, et al. Association of performance status with survival in patients with advanced non–small cell lung cancer treated with pembrolizumab monotherapy. *JAMA Netw Open* 2021; **4**: e2037120.
3 Gijtenbeek RG, de Jong K, Venmans BJ, et al. Best first-line therapy for people with advanced non-small cell lung cancer, performance status 2 without a targetable mutation or with an unknown mutation status. *Cochrane Database Syst Rev* 2023; **7:** CD013382.

## Comprehensive inclusion: demographics of clinical trials

We read with great interest Siow Ming Lee and colleagues'[1] study on the efficacy and safety of atezolizumab in patients with non-small-cell lung cancer. The research commendably addresses a broader demographic of lung cancer patients who are less commonly included in clinical trials compared with patients who have solid organ tumours.[2] But an unmistakable concern arises: the grave under-representation of Black patients.

THE LANCET

## Supplementary appendix

This appendix formed part of the original submission. We post it as supplied by the authors.

Supplement to: Cena H, Labra M, NBFC Collaborator Group. Biodiversity and planetary health: a call for integrated action. *Lancet* 2024; **403:** 1985–86.

**The NBFC Collaborator Group – List of participants**

| n. | First Name | Last Name | Title | Affiliation(s) | e-mail address |
|---|---|---|---|---|---|
| 1 | Simonetta | Fraschetti | Prof | Department of Biology, University of Naples Federico II, Napoli, Italy | simonetta.fraschetti@unina.it |
| 2 | Gianluca | Sarà | Prof | Department of Earth and Marine Science, Ecology Lab, University of Palermo, Palermo, Italy | gianluca.sara@unipa.it |
| 3 | Gian Marco | Luna | Dr | Institute for Marine Biological Resources and Biotechnology - National Research Council (IRBIM-CNR), Ancona, Italy. | gianmarco.luna@cnr.it |
| 4 | Mariachiara | Chiantore | Prof | Department of Earth, Environment and Life Sciences, University of Genova, Genova, Italy | mariachiara.chiantore@unige.it |
| 5 | Francesco | Frati | Prof | Department of Life Sciences, University of Siena, Siena, Italy | francesco.frati@unisi.it |
| 6 | Lorena | Rebecchi | Prof | Department of Biological Sciences, University of Modena and Reggio Emilia, Italy | lorena.rebecchi@unimore.it |
| 7 | Donatella | Spano | Prof | Department of Agriculture Science, University of Sassari, Sassari, Italy | spano@uniss.it |
| 8 | Carlo | Calfapietra | Director | Institute of Research on Terrestrial Ecosystems, National Research Council, Porano (TR), Italy | carlo.calfapietra@cnr.it |
| 9 | Maria Chiara | Pastore | Dr | Department of Architecture and Urban Studies, Politecnico di Milano, Milano, Italy | mariachiara.pastore@polimi.it |
| 10 | Gloria | Bertoli | Dr | Institute of Bioimaging and Molecular Physiology, National Research Council, Segrate (MI), Italy | gloria.bertoli@ibfm.cnr.it |
| 11 | Danilo | Porro | Prof | Institute of Bioimaging and Molecular Physiology, National Research Council, Segrate (MI), Italy | danilo.porro@ibfm.cnr.it |
| 12 | Isabella | Saggio | Prof | Department of Biology and Biotechnologies “Charles Darwin” Sapienza University of Rome, Roma, Italy | isabella.saggio@uniroma1.it |
| 13 | Giuseppe | Gigli | Prof | Institute of Nanotechnology, National Research Council, Lecce; University of Salento, Italy | giuseppe.gigli@cnr.it |
| 14 | Maria Carmela | Basile | Dr | National Research Council, Roma, Italy | mariacarmela.basile@cnr.it |
| 15 | Riccardo | Coratella | Dr | National Biodiversity Future Center, Palermo, Italy | riccardo.coratella@cnr.it |
| 16 | Alberto | Di Minin | Prof | Institute of Management, Scuola Sant'Anna, Pisa, Italy | alberto.diminin@santannapisa.it |

| | | | | | |
|---|---|---|---|---|---|
| 17 | Luigi | Fiorentino | President | President of National Biodiversity Future Center, Palermo, Italy | luigifiorentino1959@gmail.com |
| 18 | Maria Chiara | Carrozza | President | National Research Council, Roma, Italy | mariachiara.carrozza@cnr.it |
| 19 | Flavia | Guzzo | Prof | Department of Biotechnology, University of Verona, Verona, Italy | flavia.guzzo@univr.it |
| 20 | Stefano | Martellos | Prof | Department of Life Science, University of Trieste, Trieste, Italy | martelst@units.it |
| 21 | Andrea | Galimberti | Prof | Department of Biotechnology and Biosciences, University of Milano-Bicocca, Milano, Italy | andrea.galimberti@unimib.it |
| 22 | Telmo | Pievani | Prof | Department of Biology, University of Padova, Padova, Italy | dietelmo.pievani@unipd.it |
| 23 | Rachele | De Giuseppe | Dr | Department of Public Health, Experimental and Forensic Medicine, University of Pavia, Pavia, Italy | rachele.degiuseppe@unipv.it |