EXECUTIVE SUMMARY

INTERDISCIPLINARY SOLUTIONS FOR EU PUBLIC HEALTH

SURVEY & DEBATE

CONTACT

Francesca Pistollato, Ph.D., Humane Society
International, Brussels, Belgium,
fpistollato@hsi.org

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Contact information

Francesca Pistollato, Ph.D., Humane Society International, Brussels, Belgium, fpistollato@hsi.org

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Executive Summary

EU-funded research has significantly advanced scientific knowledge, particularly in understanding the mechanisms behind various diseases. Despite these advancements, the prevalence of diseases like dementia and cancer remains high, largely due to insufficient primary prevention and the high failure rate of drug development. Non-communicable diseases (NCDs) are a major concern, causing 90% of deaths in the EU in 2021 and significantly impacting healthcare costs and productivity. Environmental pollutants also contribute to NCDs, highlighting the need for research on the environmental impact on health. Primary prevention is crucial but underfunded, representing only 0.37% of GDP in the EU.

Drug development faces high attrition rates due to issues in preclinical experimentation and clinical trials. Effective prevention and treatment strategies require a better understanding of disease risk factors, enhanced public awareness, and innovative research and development.

Interdisciplinary collaborations are essential to address public health challenges and unmet medical needs (UMNs), which evolve with scientific and technological progress.

A survey by Humane Society International/Europe gathered feedback on urgent public health challenges and research priorities. Following this, an online roundtable discussed survey findings and EU initiatives, highlighting the need for interdisciplinary efforts and policy recommendations to translate research into practical health solutions.

An HSI Survey

- A survey was designed by HSI using the EU survey platform https://ec.europa.eu/eusurvey/runner/PublicHealthEU
- Survey link was initially shared with roundtable invitees starting September 25, 2023.
- As of January 22, 2024, 148 public health and biomed research representatives participated in the survey.

Survey Main Takeaways

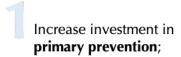The following **public health challenges** deserve prioritisation:

Mental Health Disorders	Metabolic Syndrome
AMR	Cancer
Environmental Pollution	Cardiovascular Diseases

Among the **Unmet Medical Needs (UMNs)** deserving special attention:

- early detection and diagnosis,
- primary prevention,
- better understanding of the impact of environmental factors in the onset of diseases,
- personalised medicine approaches
- better access to care and therapies,
- preservation of life quality for those already affected by diseases,

- better inclusion of ethnic minority groups in research,
- research and development on digital health and real-world data.

11 Research-Policy Interventions based on Survey Results

1 Increase investment in **primary prevention**;

2 Increase implementation of **prevention strategies**, including education/training and dissemination;

3 Foster **public awareness** about risk factors, allocating more funding to education, dissemination activities;

4 Increase funding in research on **novel disease mechanisms** and new druggable targets, disease **etiology** and **epidemiology**;

5 Prioritise **innovative human-relevant in vitro and in silico approaches** in research;

6 Allocate more resources on **secondary prevention** research (e.g., to design/implement novel diagnostic and screening tools/devices);

7 Allocate more resources on human-relevant **preclinical research** as well as **clinical research**;

8 Improve **clinical trial design**, accounting for more heterogenous cohorts and considering PK/PD aspects;

9 Increase **data sharing**;

10 Improve **access to biobanks**

11 Incentivise **better dialogue** with patients' associations to define priorities.

Conclusion

33 Actionable Recommendations

The survey and stakeholder roundtable identified urgent public health challenges and UMNs deserving prioritisation. Despite ongoing investments, these persistent challenges highlight the need for continued long-term efforts and prioritisation in the EU research policy agenda. Interdisciplinary collaborations and stakeholder engagement are crucial for maximizing the societal impact of biomedical research.

Translating research into policies takes time and requires well-crafted proposals with translational relevance. These 33 actionable recommendations aim to enhance the translatability of research findings into transformative policies:

Public Health Challenges and UMNs warranting Prioritisation

- **R1**: Prioritise research on primary prevention strategies to reduce the burden of NCDs and associated comorbidities.

- **R2**: Dedicated calls for proposals should be initiated to investigate the impact of environmental pollution on disease onset.

- **R3**: Encourage participative collaboration with low-middle income countries to effectively address emerging public health threats and environmental concerns.

- **R4**: Prioritise initiatives addressing the lack of medicines for rare diseases, children, and pregnant women.

Prevention and Early Diagnosis

- **R5**: Efforts to improve early detection of disease among women should be put in place.

- **R6**: Develop additional tools and mechanisms to demonstrate the economic benefits of prevention.

- **R7**: MS should implement prevention strategies based on the latest scientific evidence and ensure accountability.

- **R8**: Allocate more funding on personalised prevention strategies to prevent the onset, progression, and recurrence of diseases

Public Awareness, Education and Training of Healthcare Actors

- **R9**: Include comprehensive nutrition education in medical school curricula to ensure that future physicians are equipped with the knowledge and skills to provide practical nutritional advice.

- **R10**: Improve individual protective behavior and address systemic drivers of harmful behavior to tackle societal challenges.

- **R11**: Reform medical practitioners' education to include training that addresses multi-morbidities and emphasises person-centred care.

- **R12**: Involve educators, patients and patient associations to integrate their view into primary healthcare.

Impact of Environmental Pollution on Health

- **R13**: Align international policies and interventions to reduce the burden of pollution on humans and animals, and ensure clean and healthy environments for all.

- **R14**: Invest in the development of tools and methods to better understand and address the impact of chemicals, viral infections, and other environmental factors on human health.

Clinical Trial Design

- **R15**: Increase support for clinical studies addressing equitable access and inclusivity and leveraging AI technologies.

- **R16**: Develop training courses for clinicians and scientists on proper clinical research design.

- **R17**: Support research on vulnerable populations to understand gender differences in treatment responses and identify (epi)genetic disease susceptibilities.

Data Sharing and Data Quality

- **R18**: Increase efforts to promote the curation, standardisation, and harmonisation of health data.

- **R19**: Provide support for the datafication process of individual biobanks to enhance accessibility to samples and data across the EU.

- **R20**: Allocate a significant portion of new funding to projects that emphasise data reusability and build on previously released data.

- **R21**: Reduce data access restrictions in the health sector for AI applications and data sharing.

- **R22**: Enhance curation efforts for integrating personal and patient clinical data.

- **R23**: Editors should rigorously select reviewers for peer-reviewed journals to ensure critical assessment of manuscripts.

- **R24**: Incentivise publication and data sharing of findings that contradict original research hypotheses or previous evidence.

Supporting Innovative Biomedical Research

- **R25**: Allocate funds to validate and benchmark innovative models and methods to increase confidence in their use and support implementation science.

- **R26**: Enhance accessibility to biobanks and data repositories, allowing for individualised setups, to facilitate the adoption of personalised medicine approaches.

- **R27**: Further assess the clinical utility of new approaches with dedicated funding.

- **R28**: Streamline the regulatory approval process for AI technologies by involving regulators earlier in the technology development process.

Research Impact and Multidisciplinarity

- **R29**: Foster continuing partnerships between academia, industry, policymakers, and regulatory bodies to streamline the application and maximise the impact of research outputs.

- **R30**: Establish spaces and platforms to facilitate community bridging in a multi/interdisciplinary manner from project design to implementation.

- **R31**: Implement further initiatives to support the validation and qualification of newly discovered biomarkers.

- **R32**: Research projects with clear potential for practical implementation in the healthcare system and market should deserve prioritisation.

- **R33**: Robust and reliable indicators should be developed and implemented to monitor the retrospective impact of funded research.