Public consultation on EMA Regulatory Science to 2025

Fields marked with * are mandatory.

* Name

* Email

Introduction

The purpose of this public consultation is to seek views from EMA's stakeholders, partners and the general public on EMA's proposed strategy on Regulatory Science to 2025 and whether it meets stakeholders' needs. By highlighting where stakeholders see the need as greatest, you have the opportunity to jointly shape a vision for regulatory science that will in turn feed into the wider EU network strategy in the period 2020-25.

The views being sought on the proposed strategy refer both to the extent and nature of the broader strategic goals and core recommendations. We also seek your views on whether the specific underlying actions proposed are the most appropriate to achieve these goals.

The questionnaire will remain open until June 30, 2019. In case of any queries, please contact: RegulatoryScience2025@ema.europa.eu.

Completing the questionnaire

This questionnaire should be completed once you have read the draft strategy document. The survey is divided into two areas: proposals for human regulatory science and proposals for veterinary regulatory science. You are invited to complete the section which is most relevant to your area of interest or both areas as you prefer.

We thank you for taking the time to provide your input; your responses will help to shape and prioritise our future actions in the field of regulatory science.

Data Protection

By participating in this survey, your submission will be assessed by EMA. EMA collects and stores your personal data for the purpose of this survey and, in the interest of transparency, your submission will be made publicly available.
For more information about the processing of personal data by EMA, please read the privacy statement.

Questionnaire

Question 1: What stakeholder, partner or group do you represent:
- ○ Individual member of the public
- ○ Patient or Consumer Organisation
- ○ Healthcare professional organisation
- ○ Learned society
- ○ Farming and animal owner organisation
- ○ Academic researcher
- ○ Healthcare professional
- ○ Veterinarian
- ○ European research infrastructure
- ○ Research funder
- ○ Other scientific organisation
- ○ EU Regulatory partner / EU Institution
- ○ Health technology assessment body
- ○ Payer
- ○ Pharmaceutical industry
- ○ Non-EU regulator / Non-EU regulatory body
- ● Other

Please specify: Press/media/NGO/Not-for profit organisation/other scientific organisations/policy maker, etc.

NGO

Name of organisation (if applicable):

Cruelty Free International

Question 2: Which part of the proposed strategy document are you commenting upon:
- ○ Human
- ○ Veterinary
- ● Both

Question 3 (human and veterinary): What are your overall views about the strategy proposed in EMA's Regulatory Science to 2025?

Please note you will be asked to comment on the core recommendations and underlying actions in the subsequent questions.

Please remember to specify if a particular comment relates specifically to the human or veterinary part.

We welcome the creation of this strategy, which encourages regulators to keep on top of scientific developments, develop ways to identify the gaps between science and healthcare systems and work towards bridging those gaps. While we appreciate the effort that has gone into producing this strategy, we feel that there are a couple of important elements missing. In order to better explain why the development of this strategy (as well as other similar regulatory strategies and roadmaps that have recently been developed across several regions e.g. US FDA predictive toxicology roadmap, US ICCVAM strategic roadmap, US EPA strategic plan, UK Home Office non-animal technologies roadmap, Netherlands transition to non-animal research by 2025) is so important, the problems with the current regulatory testing paradigm should be briefly described in the introduction. Over the last 20 years, the limitations of the traditional approach to toxicity testing, which is heavily focused on animal tests, have become increasingly evident. Animal-based testing is expensive, time consuming and most importantly, does not always identify effects that are relevant to humans. Indeed, 90% of drugs fail in human trials despite being tested using 'traditional' animal models. Also, while the strategy mentions the importance of engaging with 'emerging science and technological innovation', the development and use of new approach methodologies or NAMs is clearly missing from the examples provided. This term describes a broad range of in vitro and in chemico assays along with in silico approaches and a variety of new testing tools such as 'high-throughput screening' and 'high-content' methods (e.g. genomics, proteomics, metabolomics) that can be used to replace the use of animals in regulatory testing. In keeping with other similar regulatory strategies (e.g. FDA roadmap), the development and use of NAMs should be described and prioritised in this strategy as a 'core recommendation' for both the human and veterinary sectors, which would in turn honour the EMA's ongoing commitment to implementing the 3Rs principles and move away from animal-based testing (https://www.ema.europa.eu/en/human-regulatory/research-development/ethical-use-animals-medicine-testing). The strategy also asks the question; 'are we generating new guidance or providing sufficient levels of advice to facilitate the utilisation and translation of these innovations?'. To this question, our answer would be 'much more work needs to be done'. One of the main reasons why NAMs are not being used, even once they have been validated or qualified, is the fear that they will not be accepted by regulators. Therefore, one of the proposed actions to support the NAMs core recommendation should be to develop clear guidance on how these methods can be used to fulfil testing requirements in lieu of traditional animal tests.

Question 4 (human and veterinary): Do you consider the strategic goals appropriate?

Strategic goal 1: Catalysing the integration of science and technology in medicines development (h & v)

- ○ Yes
- ● No

Comments on strategic goal 1 (h & v):

Please note you will be asked to comment on the core recommendations and underlying actions in the subsequent questions.

Please remember to specify if a particular comment relates specifically to the human or veterinary part.

It is not clear why the 3Rs principles are not embedded in strategic goal 1 (catalysing the integration of science and technology in medicines development) for both human and veterinary medicines. A core recommendation to 'reinforce and further embed application of the 3Rs principles' is included as a core recommendation for strategic goal 1 of the veterinary medicines part but is missing from the human medicines part. There is no reason why there should not be consistency between the strategies for human and veterinary medicines when it comes to the implementing the 3Rs principles. We are concerned with current inconsistencies that exist between the two sides; the veterinary side seems to be more open to discussion and faster to update guidelines with respect to the 3Rs while the human side is a lot less transparent and is not as open to stakeholders in general. We feel that this is an issue that needs to be addressed as a matter of urgency. We also suggest that an extra core recommendation be added to strategic goal 1 (for both the human and veterinary sides) to support the development and use of NAMs in medicines development.

Strategic goal 2: Driving collaborative evidence generation – improving the scientific quality of evaluations (h & v)

- ○ Yes
- ● No

Comments on strategic goal 2 (h & v):

Please note you will be asked to comment on the core recommendations and underlying actions in the subsequent questions.

Please remember to specify if a particular comment relates specifically to the human or veterinary part.

Again, there are some inconsistencies between the human and veterinary sides in relation to the second strategic goal (driving collaboration evidence generation - improving the scientific quality of evaluations). While the human side includes a core recommendation within this goal to 'leverage non-clinical models and 3Rs principles' this core recommendation is missing strategic goal 2 in the veterinary side. Both sides should include this important core recommendation within strategic goal 2. However, we think that it would be more appropriate to change the term 'non-clinical models' to 'NAMs' for clarity (and harmonisation purposes i.e. this term is being favoured internationally) and also to include the development of guidance as one of the underlying actions within this core recommendation (in order to provide reassurance, incentives or requirements to use these methods once they have been accepted).

Strategic goal 3: Advancing patient-centred access to medicines in partnership with healthcare systems (h-only)

- ● Yes

○ No

Strategic goal 4 (human) / 3 (veterinary): Addressing emerging health threats and availability /therapeutic challenges (h & v)

◉ Yes

○ No

Strategic goal 5 (human) / 4 (veterinary): Enabling and leveraging research and innovation in regulatory science (h & v)

◉ Yes

○ No

Question 5 (human): Please identify the top three core recommendations (in order of importance) that you believe will deliver the most significant change in the regulatory system over the next five years and why.

First choice(h)

> 8. Leverage novel non-clinical models and 3Rs

1st choice (h): please comment on your choice, the underlying actions proposed and identify any additional actions you think might be needed to effect these changes.

> As well as encouraging the development of NAMs and the adoption of the 3Rs principles, an important step that will deliver significant regulatory change over the next 5 years, is to ensure that these methods are actually being used and to build confidence in their use. It also important to ensure proper enforcement of the 3Rs principles and the requirements of Directive 2010/63, which encourages an eventual full replacement of animals. An important action to support this recommendation is to develop clear guidance and/or incentives to encourage and prioritise the use of NAMs and/or methods that take the 3Rs into serious consideration (e.g. methods that cause less suffering or use less animals).

Second choice (h)

> 13. Optimise capabilities in modelling and simulation and extrapolation

2nd choice (h): please comment on your choice, the underlying actions proposed and identify any additional actions you think might be needed to effect these changes.

> This core recommendation touches on the use of NAMs to replace animal tests or the 'use of modelling' and 'simulation' to 'improve the efficiency of medicines development by reducing the need for, and improving the design of, preclinical and clinical studies', although it is not explicitly stated. We support the suggested underlying action in this core recommendation to 'promote development and international harmonisation of methods and standards via a multi-stakeholder platform' as well as the reference to the ICH. Global harmonisation and data sharing across regions would have a huge impact for animals over the next 5 years (e.g. avoidance of duplicate animal tests to satisfy different regional requirements).

Third choice (h)

○ 1. Support developments in precision medicine, biomarkers and 'omics'

- 2. Support translation of Advanced Therapy Medicinal Products cell, genes and tissue-based products into patient treatments
- 3. Promote and invest in the Priority Medicines scheme (PRIME)
- 4. Facilitate the implementation of novel manufacturing technologies
- 5. Create an integrated evaluation pathway for the assessment of medical devices, in vitro diagnostics and borderline products
- 6. Develop understanding of and regulatory response to nanotechnology and new materials' utilisation in pharmaceuticals
- 7. Diversify and integrate the provision of regulatory advice along the development continuum
- 8. Leverage novel non-clinical models and 3Rs
- 9. Foster innovation in clinical trials
- 10. Develop the regulatory framework for emerging digital clinical data generation
- 11. Expand benefit-risk assessment and communication
- 12. Invest in special populations initiatives
- 13. Optimise capabilities in modelling and simulation and extrapolation
- 14. Exploit digital technology and artificial intelligence in decision-making
- 15. Contribute to HTAs' preparedness and downstream decision-making for innovative medicines
- 16. Bridge from evaluation to access through collaboration with Payers
- 17. Reinforce patient relevance in evidence generation
- 18. Promote use of high-quality real world data (RWD) in decision-making
- 19. Develop network competence and specialist collaborations to engage with big data
- 20. Deliver real-time electronic Product Information (ePI)
- 21. Promote the availability and uptake of biosimilars in healthcare systems
- 22. Further develop external communications to promote trust and confidence in the EU regulatory system
- 23. Implement EMA's health threats plan, ring-fence resources and refine preparedness approaches
- 24. Continue to support development of new antimicrobials and their alternatives
- 25. Promote global cooperation to anticipate and address supply challenges
- 26. Support innovative approaches to the development and post-authorisation monitoring of vaccines
- 27. Support the development and implementation of a repurposing framework
- 28. Develop network-led partnerships with academia to undertake fundamental research in strategic areas of regulatory science
- 29. Leverage collaborations between academia and network scientists to address rapidly emerging regulatory science research questions
- 30. Identify and enable access to the best expertise across Europe and internationally
- 31. Disseminate and share knowledge, expertise and innovation across the regulatory network and to its stakeholders

3rd choice (h): please comment on your choice, the underlying actions proposed and identify any additional actions you think might be needed to effect these changes.

Question 5 (veterinary): Please identify the top three core recommendations (in order of importance) that you believe will deliver the most significant change in the regulatory system over the next five years and why.

First choice (v)

Please note that veterinary goals start at no.32

> 33. Reinforce and further embed application of the 3Rs principles

1st choice (v): please comment on your choice, the underlying actions proposed and identify any additional actions you think might be needed to effect these changes.

> While the EMA has stated that they are committed to the implementation of the 3Rs principles (as described in their 'ethical use of animals in medical testing' policy), more work needs to be done to really drive the message home. In order to see a significant change in the regulatory system that will result in safer and more effective medicines being produced faster and at lower cost (both financially and ethically), there needs to be a sea change away from the use of traditional animal tests, which are preventing real progress from being made and hindering the full realisation of sophisticated innovations in science and technology. We strongly encourage the EMA to include the conduct of retrospective analyses of the existing animal tests as an action. This would help fully characterise their reliability, reproducibility and applicability domain, which would in turn encourage a significant move towards full implementation of the 3Rs principles and increased development and focus on the use of NAMs, which is necessary to advance regulatory science and deliver safer and more effective healthcare solutions in the long run.

Second choice (v)

Please note that veterinary goals start at no.32

> 32. Transform the regulatory framework for innovative veterinary medicines

2nd choice (v): please comment on your choice, the underlying actions proposed and identify any additional actions you think might be needed to effect these changes.

>

Third choice (v)

Please note that veterinary goals start at no.32

- ○ 32. Transform the regulatory framework for innovative veterinary medicines
- ○ 33. Reinforce and further embed application of the 3Rs principles
- ○ 34. Facilitate implementation of novel manufacturing models
- ○ 35. Update Environmental Risk Assessments in line with the latest scientific knowledge
- ○ 36. Apply the latest scientific principles to the assessment of the safety of residues of veterinary medicines
- ○ 37. Collaborate with stakeholders to modernise veterinary pharmacoepidemiology and pharmacovigilance
- ○ 38. Develop new and improved communication and engagement channels and methods to reach out to stakeholders
- ○ 39. Develop new approaches to improve the benefit-risk assessment of veterinary medicinal products
- ○

40. Continue to promote the responsible use of antimicrobials and their alternatives

○ 41. Coordinate Network activities to improve data collection on antimicrobial use in animals

○ 42. Engage with stakeholders to minimise the risks of antiparasitic resistance

○ 43. Promote and support development of veterinary vaccines

○ 44. Develop network-led partnerships with academia to undertake fundamental research in strategic areas of regulatory science

○ 45. Leverage collaborations between academia and network scientists to address rapidly emerging regulatory science research questions

○ 46. Identify and enable access to the best expertise across Europe and internationally

○ 47. Disseminate and exchange knowledge, expertise and innovation across the network and to its stakeholders

3rd choice (v): please comment on your choice, the underlying actions proposed and identify any additional actions you think might be needed to effect these changes.

Question 6 (human and veterinary): Are there any significant elements missing in this strategy. Please elaborate which ones (h & v)

Please remember to specify if a particular comment relates specifically to the human or veterinary part.

As described in our answer to question 1., the problems with the current regulatory testing paradigm are missing from the strategy as well as the limitations of animal-based testing. NAMs are also not mentioned in this strategy and we feel that there should be an even stronger focus on the development, use and prioritisation of 3Rs methods (e.g. development of clear guidance) throughout the entire strategy.

Question 7 (human): The following is to allow more detailed feedback on prioritisation, which will also help shape the future application of resources. Your further input is therefore highly appreciated. Please choose for each row the option which most closely reflects your opinion. For areas outside your interest or experience, please leave blank.

Should you wish to comment on any of the core recommendations (and their underlying actions) there is an option to do so.

Strategic goal 1: Catalysing the integration of science and technology in medicines development (h)

	Very important	Important	Moderately important	Less important	Not important
1. Support developments in precision medicine, biomarkers and 'omics'	◎	◎	◎	◎	◎
2. Support translation of Advanced Therapy Medicinal Products cell, genes and tissue-based products into patient treatments	◎	◎	◎	◎	◎
3. Promote and invest in the Priority Medicines scheme (PRIME)	◎	◎	◎	◎	◎
4. Facilitate the implementation of novel manufacturing technologies	◎	◎	◎	◎	◎
5. Create an integrated evaluation pathway for the assessment of medical devices, in vitro diagnostics and borderline products	◎	◎	◎	◎	◎
6. Develop understanding of and regulatory response to nanotechnology and new materials' utilisation in pharmaceuticals	◎	◎	◎	◎	◎
7. Diversify and integrate the provision of regulatory advice along the development continuum	◎	◉	◎	◎	◎

Please feel free to comment on any of the above core recommendations or their underlying actions. **Kindly indicate the number of the recommendation** you are commenting on:

Strategic goal 2: Driving collaborative evidence generation – improving the scientific quality of evaluations (h)

	Very important	Important	Moderately important	Less important	Not important
8. Leverage novel non-clinical models and 3Rs	◉	○	○	○	○
9. Foster innovation in clinical trials	○	○	○	○	○
10. Develop the regulatory framework for emerging digital clinical data generation	○	◉	○	○	○
11. Expand benefit-risk assessment and communication	○	○	○	○	○
12. Invest in special populations initiatives	○	○	○	○	○

	Very important	Important	Moderately important	Less important	Not important
13. Optimise capabilities in modelling and simulation and extrapolation	○	◉	○	○	○
14. Exploit digital technology and artificial intelligence in decision-making	○	◉	○	○	○

Please feel free to comment on any of the above core recommendations or their underlying actions. **Kindly indicate the number of the recommendation you are commenting on**:

Strategic goal 3: Advancing patient-centred access to medicines in partnership with healthcare systems (h)

	Very important	Important	Moderately important	Less important	Not important

15. Contribute to HTAs' preparedness and downstream decision-making for innovative medicines	○	○	○	○	○
16. Bridge from evaluation to access through collaboration with Payers	○	○	○	○	○
17. Reinforce patient relevance in evidence generation	○	○	○	○	○
18. Promote use of high-quality real world data (RWD) in decision-making	○	○	○	○	○
19. Develop network competence and specialist collaborations to engage with big data	○	○	○	○	○
20. Deliver real-time electronic Product Information (ePI)	○	○	○	○	○
21. Promote the availability and uptake of biosimilars in healthcare systems	○	○	○	○	○
22. Further develop external communications to promote trust and confidence in the EU regulatory system	○	○	○	○	○

Please feel free to comment on any of the above core recommendations or their underlying actions. **Kindly indicate the number of the recommendation you are commenting on**:

Strategic goal 4: Addressing emerging health threats and availability/therapeutic challenges (h)

	Very important	Important	Moderately important	Less important	Not important
23. Implement EMA's health threats plan, ring-fence resources and refine preparedness approaches	○	○	○	○	○
24. Continue to support development of new antimicrobials and their alternatives	○	○	○	○	○
25. Promote global cooperation to anticipate and address supply challenges	○	○	○	○	○
26. Support innovative approaches to the development and post-authorisation monitoring of vaccines	○	○	○	○	○

	Very important	Important	Moderately important	Less important	Not important
27. Support the development and implementation of a repurposing framework	○	○	○	○	○

Please feel free to comment on any of the above core recommendations or their underlying actions. **Kindly indicate the number of the recommendation you are commenting on**:

[blank comment box]

Strategic goal 5: Enabling and leveraging research and innovation in regulatory science (h)

	Very important	Important	Moderately important	Less important	Not important
28. Develop network-led partnerships with academia to undertake	○	●	○	○	○

fundamental research in strategic areas of regulatory science					
29. Leverage collaborations between academia and network scientists to address rapidly emerging regulatory science research questions	⊙	⊙	⊙	⊙	⊙
30. Identify and enable access to the best expertise across Europe and internationally	⊙	⊙	⊙	⊙	⊙
31. Disseminate and share knowledge, expertise and innovation across the regulatory network and to its stakeholders	⊙	◉	⊙	⊙	⊙

Please feel free to comment on any of the above core recommendations or their underlying actions. **Kindly indicate the number of the recommendation you are commenting on**:

Question 7 (veterinary): The following is to allow more detailed feedback on prioritisation, which will also help shape the future application of resources.Your further input is therefore highly appreciated. Please choose for each row the option which most closely reflects your opinion. For areas outside your interest or experience, please leave blank.

Should you wish to comment on any of the core recommendations (and their underlying actions) there is an option to do so.

Strategic goal 1: Catalysing the integration of science and technology in medicines development (v)

	Very important	Important	Moderately important	Less important	Not important
32. Transform the regulatory framework for innovative veterinary medicines	○	◉	○	○	○
33. Reinforce and further embed application of the 3Rs principles	◉	○	○	○	○
34. Facilitate implementation of novel manufacturing models	○	○	○	○	○

Please feel free to comment on any of the above core recommendations or their underlying actions. **Kindly indicate the number of the recommendation you are commenting on**:
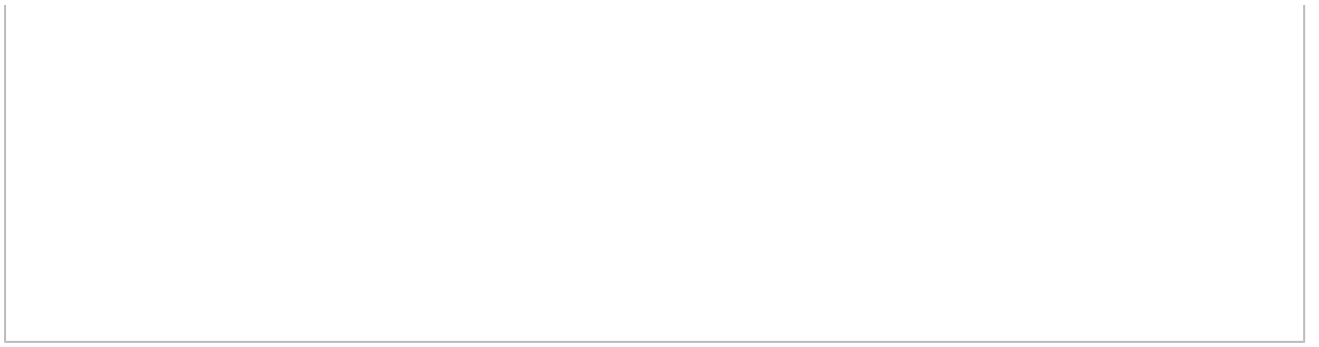
Strategic goal 2: Driving collaborative evidence generation – improving the scientific quality of evaluations (v)

	Very important	Important	Moderately important	Less important	Not important
35. Update Environmental Risk Assessments in line with the latest scientific knowledge	○	○	○	○	○
36. Apply the latest scientific principles to the assessment of the safety of residues of veterinary medicines	○	●	○	○	○
37. Collaborate with stakeholders to modernise veterinary pharmacoepidemiology and pharmacovigilance	○	○	○	○	○
38. Develop new and improved communication and engagement channels and methods to reach out to stakeholders	○	○	○	○	○
39. Develop new approaches to improve the benefit-risk assessment of veterinary medicinal products	○	○	○	○	○

Please feel free to comment on any of the above core recommendations or their underlying actions. **Kindly indicate the number of the recommendation you are commenting on**:

Strategic goal 3: Addressing emerging health threats and availability/therapeutic challenges (v)

	Very important	Important	Moderately important	Less important	Not important
40. Continue to promote the responsible use of antimicrobials and their alternatives	◎	◎	◎	◎	◎
41. Coordinate Network activities to improve	◎	◎	◎	◎	◎

data collection on antimicrobial use in animals					
42. Engage with stakeholders to minimise the risks of antiparasitic resistance	⊙	⊙	⊙	⊙	⊙
43. Promote and support development of veterinary vaccines	⊙	⊙	⊙	⊙	⊙

Please feel free to comment on any of the above core recommendations or their underlying actions. **Kindly indicate the number of the recommendation you are commenting on**:

Strategic goal 4: Enabling and leveraging research and innovation in regulatory science (v)

	Very important	Important	Moderately important	Less important	Not important
44. Develop network-led partnerships with academia to undertake fundamental research in strategic areas of regulatory science	◉	◉	◉	◉	◉
45. Leverage collaborations between academia and network scientists to address rapidly emerging regulatory science research questions	◉	◉	◉	◉	◉
46. Identify and enable access to the best expertise across Europe and internationally	◉	◉	◉	◉	◉
47. Disseminate and share knowledge, expertise and innovation across the regulatory network and to its stakeholders	◉	◉	◉	◉	◉

Please feel free to comment on any of the above core recommendations or their underlying actions. **Kindly indicate the number of the recommendation you are commenting on**:

Useful links

EMA website: Public consultation page (https://www.ema.europa.eu/en/regulatory-science-strategy-2025)

Background Documents

EMA Regulatory Science to 2025.pdf

Contact

RegulatoryScience2025@ema.europa.eu