



EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

Regulatory Support to EU Research

OPEN INFO DAY Horizon 2020 'Health, demographic change and wellbeing'
Friday, 8 December 2017
Brussels

Presented by Marisa Papaluca
Senior Scientific Advisor, Scientific Committees Regulatory Science Strategy

An agency of the European Union





Declaration of Interests

I am full staff member of the European Medicines Agency and I do not have interests that might pose a conflict with my duties.



Outline

Regulating medicines in EU

Framework of collaboration with Academia: why - what - how

'Health, demographic change and well-being' Work Programme 2018-2020

Conclusions

Q&A



The European medicines regulatory network



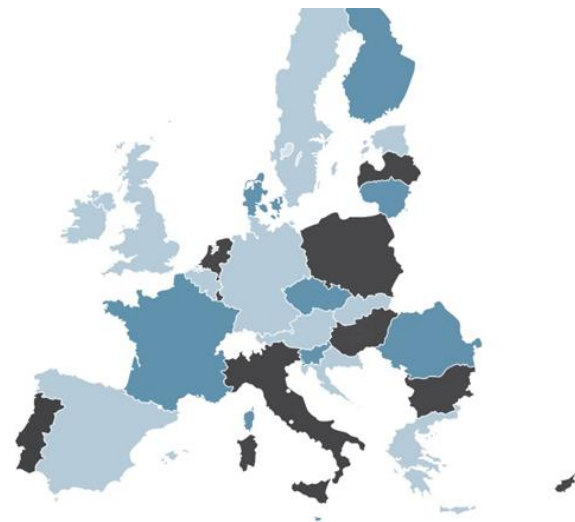
Closely-coordinated regulatory network of national competent authorities (~50), European Medicines Agency (EMA) and the European Commission
Collaborative operational model within the EU and internationally



How are medicines approved?



Centralised procedure (via EMA)



National procedures (via NCAs)

Centralised Procedure Mandatory for new medicines to treat:

- [human immunodeficiency virus](#) (HIV) or acquired immune deficiency syndrome (AIDS)
- [cancer](#)
- [diabetes](#)
- [neurodegenerative diseases](#)
- [auto-immune and other immune dysfunctions](#)
- [viral diseases](#)
- [medicines derived from biotechnology processes, such as genetic engineering](#)
- [advanced-therapy medicines](#), such as gene-therapy, somatic cell-therapy or tissue-engineered medicines
- [orphan medicines](#) (medicines for rare diseases)
- [veterinary medicines for use as growth or yield enhancers](#)

It is **optional** for other medicines:

- containing new active substances for indications other than those stated above
- **that are a significant therapeutic, scientific or technical innovation**
- whose authorisation would be in the **interest of public or animal health at EU level**

Personalised medicine

- Microbiome
- Data driven-in silico models
- Mechanisms of co-morbidities
- Combinatorial therapies
- Collaboration with Canada on “human data”
- Pilots of implementation of personalised medicine
- Actions in support of ICPeMed
- Rare Diseases

Digital transformation in health and care

- In silico medicine
- Personal Health Record/Electronic Health Record
- Big data and Artificial Intelligence
- Univocal identification of medicines
- Cyber Security in health and care

Innovative health and care systems- Integration of care

- Patient centred approaches palliative care/EofL
- HTA research to support evidence-based healthcare

Innovative health and care industry

- Innovation platforms for ATMPs
- Regenerative medicine
- Strengthen regulatory science supporting advice

Infectious diseases

- New anti-infective agents for NID
- HIV/TB/HCV in collaboration with Russia
- Stratified hosted directed approaches
- EU clinical research network

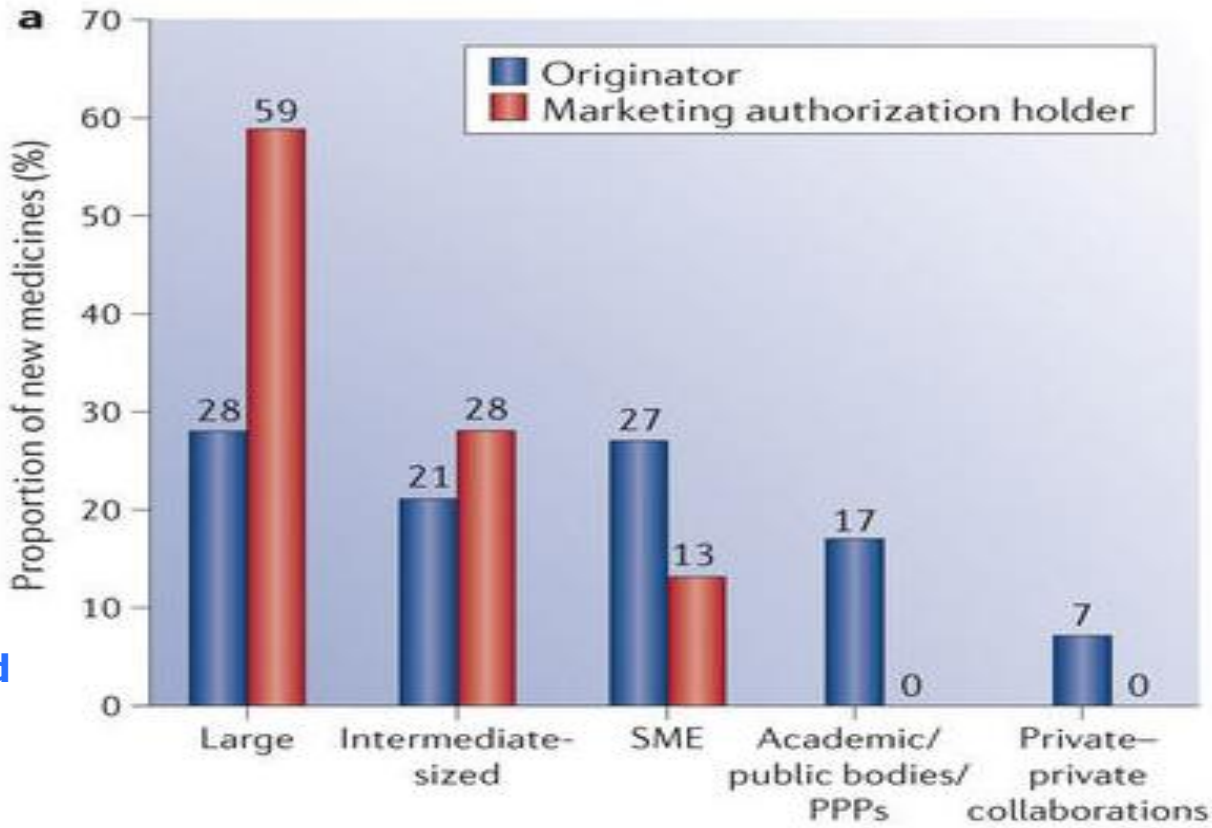
Improving global health

- Coordination of EU brain research
- Maternal and child health
- Strategic collaboration with China
- Prevention and management of hypertension and/or diabetes

Regulatory watch:
Where do new medicines originate from in the EU?
Nature Reviews Drug Discovery Volume: 13, Pages: 92–93;
Published online 31 January 2014

Innovation
EMA Regulatory Science Observatory (RSO) for Horizon Scanning Launched 2016 (Science, technology and regulatory tools)

Originator and the marketing authorization holder for 94 approved products evaluated, divided according to organization type





Guido Rasi, EMA Executive Director

“EMA wants to move to a new level of collaboration with academia.

Academia play an important role in the EU medicines regulatory network.

Interaction with EU regulators can help academia translate their discoveries into patient-focused medicines.

Working more closely together will bring great benefits to public health”.

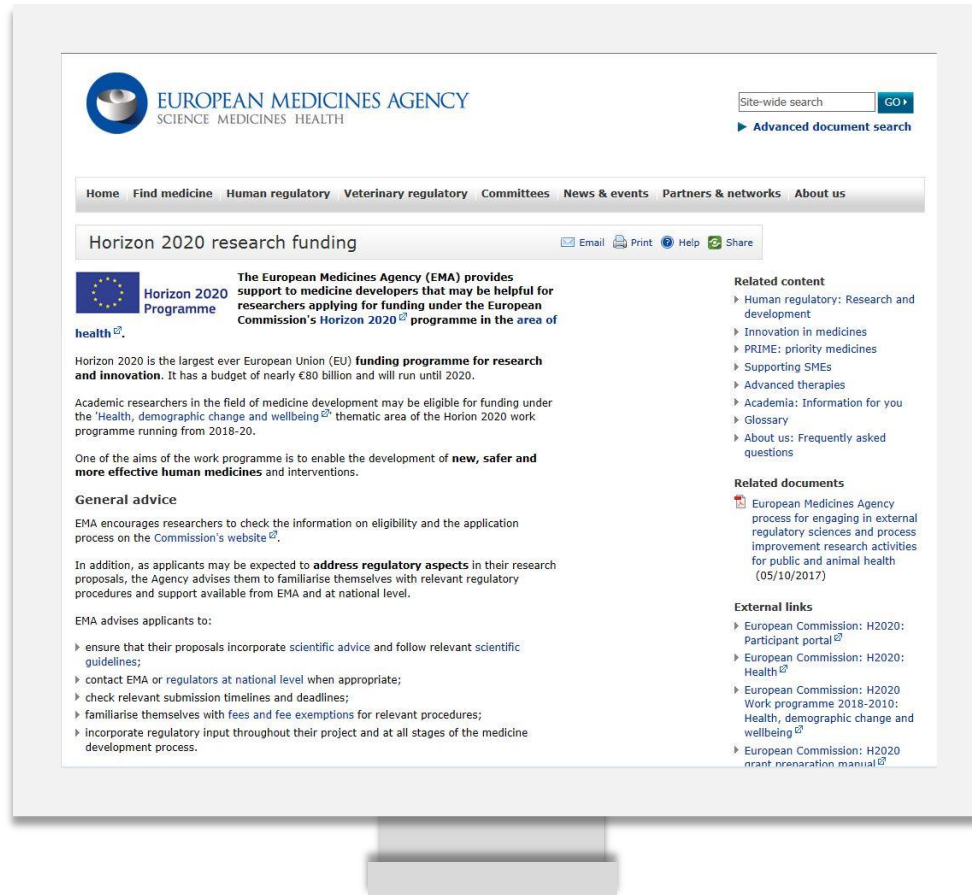
Academia and EMA web pages: facilitate communication

EUROPEAN MEDICINES AGENCY

The screenshot shows the EMA website's 'Academia' section. At the top, there is the EMA logo and a search bar. Below the navigation menu, the 'Academia' heading is followed by social media icons and a 'Find information for...' section with links to 'Parents and carers', 'Healthcare professionals', 'Animal health professionals', and 'Pharmaceutical industry'. A 'Search for medicines' section includes a search box and a 'Quick search' button. The main content area is divided into 'Featured information' and 'News for academia'. Under 'Featured information', there are articles about a 'Public hearing on valproate' (dated 25/07/2017) and 'Updated methodological guidance on pharmacoepidemiology studies' (dated 21/07/2017). Under 'News for academia', there are articles about 'Reducing off-label use of antimicrobials in veterinary medicine to reduce risk of resistance' (dated 25/07/2017), 'Recommendations for use of aminoglycosides in animals to reduce risk of antimicrobial resistance' (dated 25/07/2017), 'Revised guideline on first-in-human clinical trials' (dated 21/07/2017), and 'Even medicines recommended for approval, including five orphans...' (dated 21/07/2017). A 'Scientific advice & protocol assistance' section is also visible at the bottom.

This screenshot shows the EMA website's 'Academia' section with a large central graphic. The graphic is titled 'EMA supports' and features icons for 'dialogue', 'engagement', 'research and development', 'high standards', 'innovation', 'collaboration', 'awareness', 'knowledge sharing', and 'progress'. Below the graphic, the 'Framework for collaboration' section states that the EMA Management Board adopted a framework for collaboration between EMA and academia in March 2017. The framework aims to: raise awareness of EMA's role within the European medicines regulatory network; promote and further develop regulatory support for translating academic research into novel methodologies and medicines; ensure that the best scientific expertise and academic research is available to inform regulatory decision-making; and collaborate on areas of research on regulatory science, such as novel approaches, endpoints and methodologies. A 'Contact point' section at the bottom right provides the email address: academia@ema.europa.eu.

academia@ema.europa.eu



The screenshot shows the EMA website's 'Horizon 2020 research funding' page. The page features the EMA logo and navigation menu at the top. The main content area includes a heading 'Horizon 2020 research funding' with social sharing icons. Below this is a section titled 'Horizon 2020 Programme' with a sub-heading: 'The European Medicines Agency (EMA) provides support to medicine developers that may be helpful for researchers applying for funding under the European Commission's Horizon 2020 programme in the area of health'. The text describes the programme's budget and aims, followed by 'General advice' for researchers. A list of 'External links' is provided at the bottom of the main content area.

Horizon 2020 Programme
The European Medicines Agency (EMA) provides support to medicine developers that may be helpful for researchers applying for funding under the European Commission's Horizon 2020 programme in the area of health.

Horizon 2020 is the largest ever European Union (EU) funding programme for research and innovation. It has a budget of nearly €80 billion and will run until 2020.

Academic researchers in the field of medicine development may be eligible for funding under the 'Health, demographic change and wellbeing' thematic area of the Horizon 2020 work programme running from 2018-20.

One of the aims of the work programme is to enable the development of **new, safer and more effective human medicines** and interventions.

General advice

EMA encourages researchers to check the information on eligibility and the application process on the Commission's website.

In addition, as applicants may be expected to **address regulatory aspects** in their research proposals, the Agency advises them to familiarise themselves with relevant regulatory procedures and support available from EMA and at national level.

EMA advises applicants to:

- ensure that their proposals incorporate scientific advice and follow relevant scientific guidelines;
- contact EMA or regulators at national level when appropriate;
- check relevant submission timelines and deadlines;
- familiarise themselves with fees and fee exemptions for relevant procedures;
- incorporate regulatory input throughout their project and at all stages of the medicine development process.

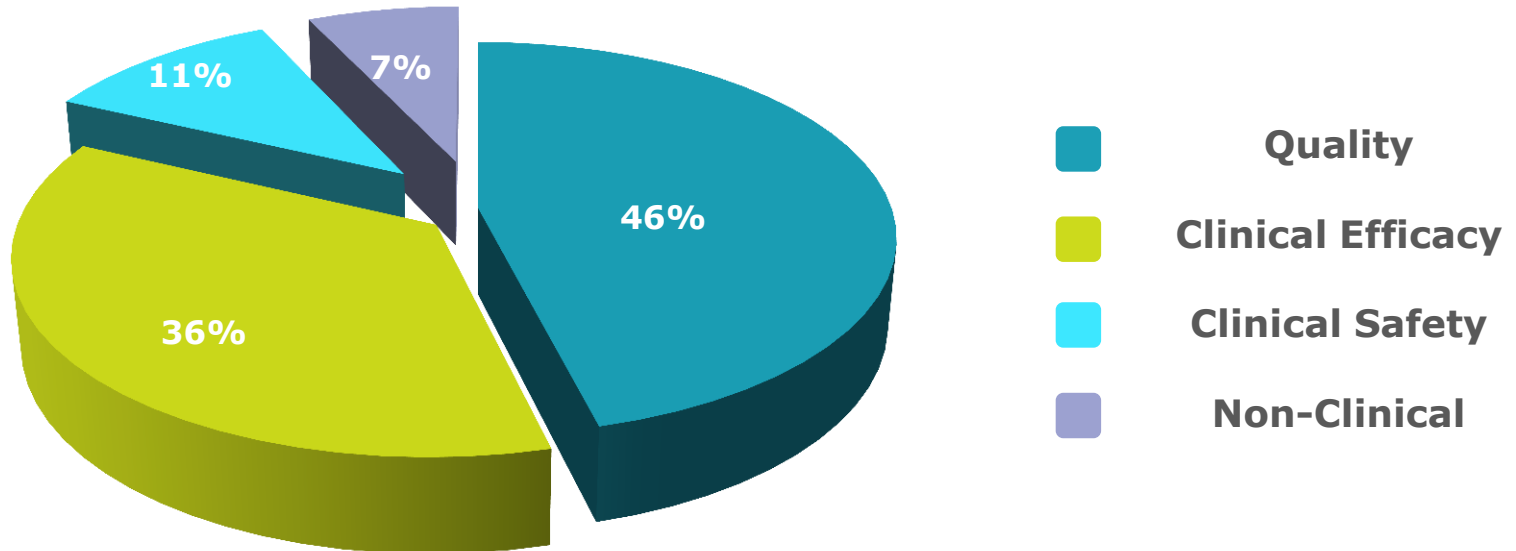
External links

- European Commission: H2020: Participant portal
- European Commission: H2020: Health
- European Commission: H2020 Work programme 2018-2010: Health, demographic change and wellbeing
- European Commission: H2020 grant preparation manual

...including
guidance and
support for
collaboration on
regulatory science
research and
working together

Most frequent major objections in SME applications – human medicines

Scope of major objections





- **SMEs office** * regulatory and scientific support for protocol assistance, fee reductions, training, workshops etc.

- **Innovation task force (ITF) safe harbour** *

- **Qualification of novel methodologies**

- **Scientific advice**

- * **No fee**
- * **fee reduction for academics**



- Advanced therapy medicinal product classification *

- Paediatric investigation plan *

- Orphan medicine designation *

- PRIME scheme (PRiority Medicines) *

- EU-Innovation Network (EU-IN) (H) *

Keep in mind: **time** and potential fees

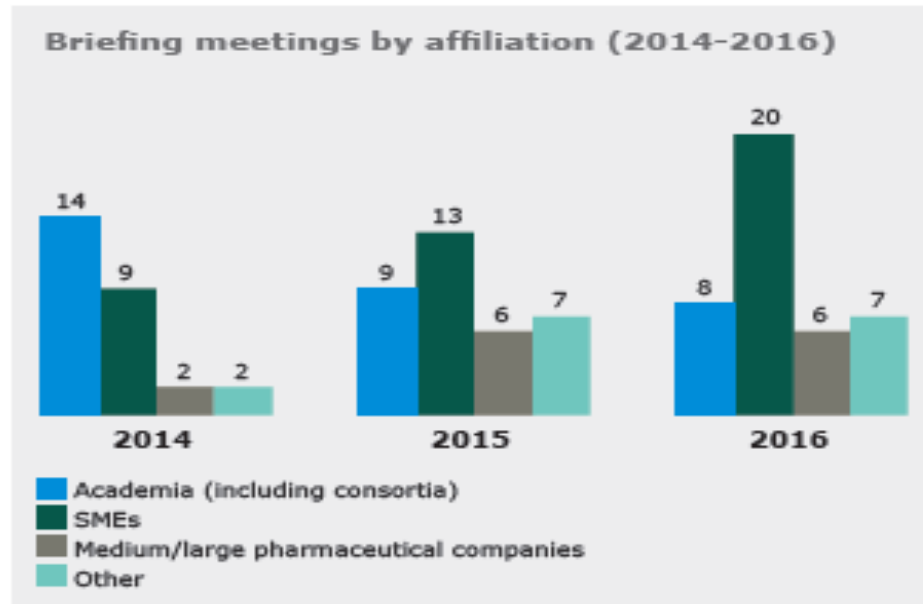
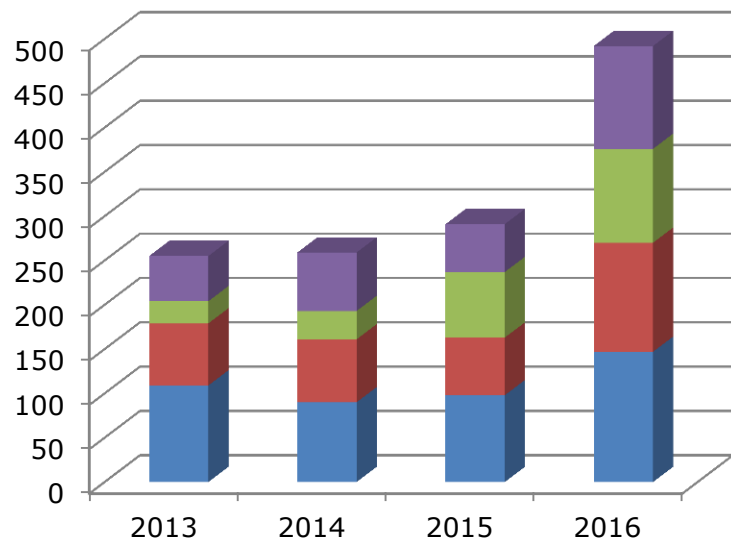
(Note on fees payable to EMA and exemptions)

EMA Innovation Task Force (ITF) *



Multidisciplinary platform
for **preparatory dialogue**
and **orientation on**
innovative methods,
technologies and medicines

EMA ITF Briefing Meetings: advancing regulatory science



40% of the meetings were on innovative ATMPs and 25% related to a broad spectrum of innovative methods to support the development of medicines and early exploration of novel (statistical) approaches in clinical trials, modelling and simulation.

EMA ITF support on innovators' further progress

92 ITF Briefing meetings organised between 2014 – 2016, of which **80%** were requested by academia, SMEs and consortia (ITF support focus)

- 15% are Advanced Therapies (Gene, Cell, Tissue engineered products)
- 14% consider seeking EU Orphan Drug designation (rare diseases)
- 20% consider interaction with the EMA Paediatric Committee (PDCO)
- 30% of applicants consider applying a formal scientific advice request
- 11% consider **Qualification of methodology** (e.g. Biomarker qualification)
- 10% consider Marketing Authorisation Application within foreseeable future



- Regulatory validity and acceptability of a method in medicines life-cycle R&D context
- Scientific pathway for innovative methods and tools (e.g. biomarkers, in silico models, e-health)
- Joint qualification EMA/FDA can be requested
- Clear outcomes:
 - Letter of support, OR
 - Qualification Advice, OR
 - Qualification Opinion



10 November 2014
EMA/CHMP/SAWP/72894/2008
Revision 1: January 2012¹
Revision 2: January 2014²
Revision 3: November 2014³
Scientific Advice Working Party of CHMP

Qualification of novel methodologies for drug development: guidance to applicants

Agreed by SAWP	27 February 2008
Adoption by CHMP for release for consultation	24 April 2008
End of consultation (deadline for comments)	30 June 2008
Final Agreed by CHMP	22 January 2009

Essential considerations when preparing for scientific advice on new methodologies now published on the EMA H2020 web page

http://www.ema.europa.eu/ema/index.jsp?curl=pages/regulation/document_listing/document_listing_000319.jsp&mid=WC0b01ac0580022bb0#section3



Novel Methodologies

- Animal Models
- Biomarkers
- In silico-models
- Clinical Outcome Assessment (COA)
(End-points, PRO, ClinRO, ObsRO)
- Imaging Markers
- Symptom Scales
- Statistical Methods



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13 November 2017
EMA/750178/2017

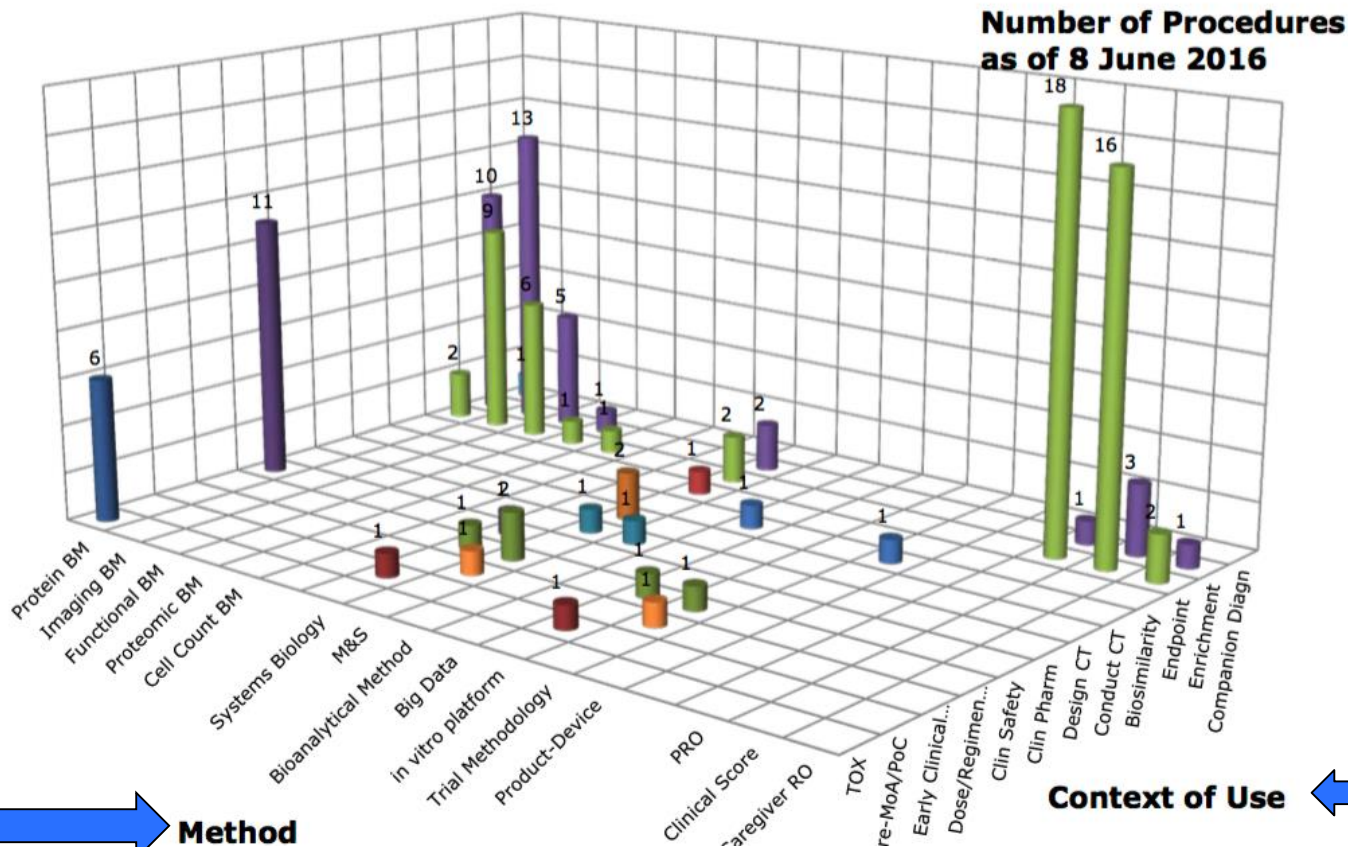
Essential considerations for successful qualification of novel methodologies

The European Medicines Agency (EMA) qualification of novel methodologies (e.g. biomarkers, clinical outcome assessments, imaging methods, new animal models, statistical methods, innovative trial methodologies, big data approaches) is a voluntary scientific pathway to establish the regulatory acceptability of a specific use of a methodology for the development of medicinal products.

The purpose of this document is to highlight important points to consider that have been identified as common major challenges and limitations which compromise successful qualification of innovative methods.

The following checklist does not provide comprehensive guidance. There is a wide variety of potential specific scientific and regulatory considerations which may best be addressed by requesting qualification advice offered by the EMA¹.

Qualification of Novel Methodologies: methods and context

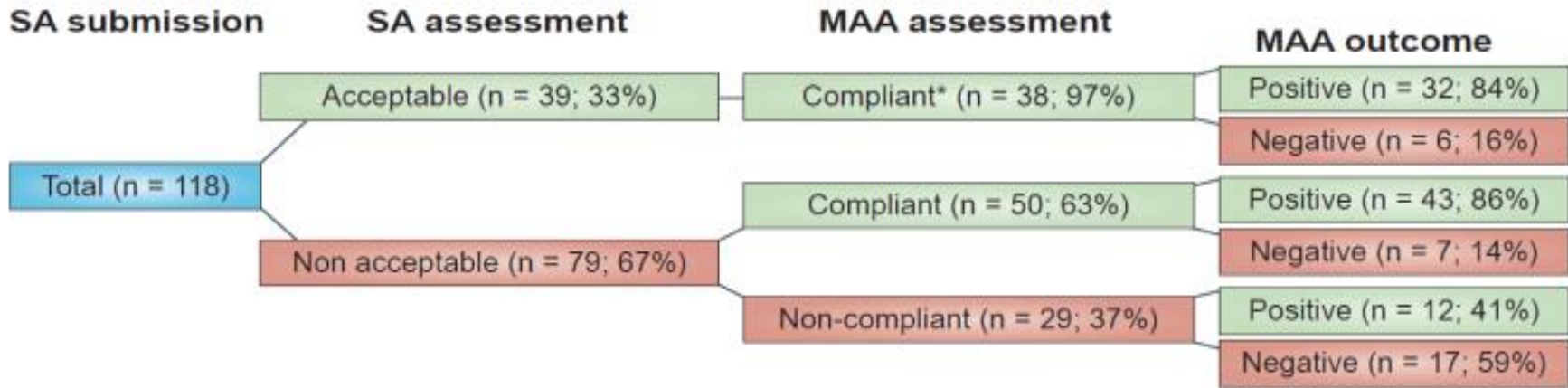


Outcome of the November 2017 CHMP meeting in relation to scientific advice procedures

Final scientific advice procedures

Substance	Intended indication(s)	Type of request				Topic			
		New		Follow-up		Pharmaceutical	Pre-clinical	Clinical	Significant Benefit
		SA	PA	SA	PA				
Biological	Treatment of Clostridium difficile infection.	x				x	x	x	
Chemical	Reduction of risk of cardiovascular death in chronic kidney disease.	x						x	
Biological	Treatment of Farber disease.				x		x		
Biological	Treatment of Farber disease.				x			x	
Biological	Weight management.	x					x	x	
Chemical	Treatment of enteral feeding intolerance.	x						x	

(2008-12; N=118 MAAs)



	MAA procedure average days	Total MO*			
		Quality/Pre-Clinical	Clin. Efficacy	Clin. Safety	Total
Compliance	367	1.64	2.66	0.86	5.16
Non-Compliance	428	4.25	3.91	1.42	9.58

- Regnstrom et al; Eur J Clin Pharmacol. 2010 Jan;66(1):39-48 Regulatory watch: Impact of scientific advice from the European Medicines Agency
- Matthias P. Hofer et al; Nature Reviews Drug Discovery(2015)doi:10.1038/nrd4621 Published online 17 April 2015



National Competent Authorities (NCAs) responsible for key tasks, including

- **Authorisation and Good Manufacturing and Lab Practices**
- **Clinical trial authorisation**
- **ATMPs Hospital Exemption**
- **Compassionate use**
- **NCAs scientific advice (fees might apply)**
- **NCA's Innovation Offices: specific schemes/services (fees might apply) including decision on applicable framework (e.g. device or medicine)**



Concerted Support Action (CSA)
Strengthen *Regulatory Sciences* and support for
regulatory *Scientific Advice*

EU Innovation Network
Outreach opportunity 2018-2020





In summary

- Scientific progress in knowledge, methods and technologies are key for development of safe and effective new therapies
- Regulatory awareness and considerations can tangibly enhance the translation and impact of your research programme in development tools and treatments for patients
- Platforms for dialogue, guidelines and scientific advice readily available for innovators both at national and EU level: speak at an early stage with us, plan ahead, consider investment of time and fees
- Make best use of the EMA Framework and webpages for collaboration with Academia (academia@ema.europa.eu) and of Regulators' outreach activities

Welcome in the European Regulatory Science eco-system

Thanks for your attention

Acknowledgments

Isabelle.Moulon@ema.europa.eu (Academia)

Monica.Ensini@ema.europa.eu (Academia)

Falk.Ehmann@ema.europa.eu (Innovation Task Force)

Spiros.Vamvakas@ema.europa.eu (Scientific Advice)

Thorsten.Vetter@ema.europa.eu (Scientific Advice Qualification)

Constantinos.Ziogas@ema.europa.eu (SMEs Office)

Further information: academia@ema.europa.eu



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