



share and move to face nasty bugs

JOINING FORCES AGAINST INFECTIOUS THREATS



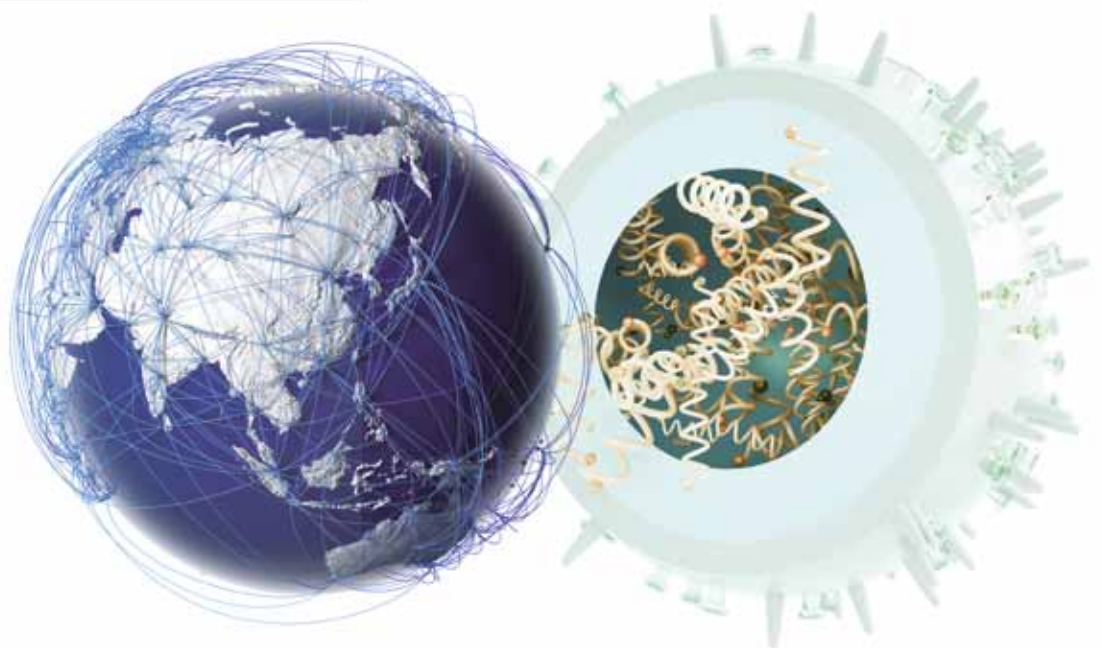
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In a globalized and interconnected world like the one we live in, infectious diseases can spread much faster and more easily than they used to do. The same happens with information, but misinformation as well, mainly through the web and the social networks.

Science and society are tightly interconnected as well, nowadays. Research has shown that issues relating science and medicine with society are very relevant in the spread of diseases. Nowadays people are no more willing to blindly accept orders from authorities: they want to understand what is happening to them and their families and have their say. Two-ways communication is therefore essential, but needed also to understand which are attitudes, fears, practical difficulties than the public or some specific groups are facing during an outbreak. Open access helps a fruitful exchange among scientists, accelerating a response. Cultural and ethical issues, i.e. related to the risk of stigma, can also have a strong impact on the spread of a disease.

ASSET (Action plan in Science in Society in Epidemics and Total pandemics) is an EU funded, 48 month Mobilisation and Mutual Learning Action Plan (MMLAP) project. It worked combining public health, vaccine and epidemiological research, social and political sciences, law and ethics, gender studies, science communication and media, in order to develop an integrated, transdisciplinary, strategy for pandemic and epidemic preparedness at





local, regional and national levels, so bringing societal issues into the field of preparedness and response.

CE Decision 1082/2013/EU on serious cross-border threats to health stresses that “inconsistent or confusing communication with the public and stakeholders such as healthcare professionals can have a negative impact on the effectiveness of the response from a public health perspective as well as on economic operators”. The decision requires every three years all member states to provide the Commission with an update on the latest situation with regard to their preparedness and response planning at national level, in an intersectoral dimension.

ASSET project provides research, experiences, proposals and tools that could be useful to incorporate Science-in-society issues into these plans.

Background

Many lessons have been learnt from 2009 A(H1N1) pandemic, followed by ebola epidemic in Western Africa in 2014. In both cases communication proved to be a weak point, which, in the first case, could put an effective response at risk, since the pandemic had been as serious as it was thought it would have been, and in the second case actually caused a higher burden of victims than it could have been.

According to the European Centre for Disease Prevention and Control (ECDC) in 2009 pandemic “... main challenge

was in dealing with the perception and communication of risks. In future, those involved in risk communication need to develop ways of better involving the scientific community and civil society. Their aim must be that risk is properly understood and trust maintained”¹.

Previous related EU-funded projects, i.e. TELL ME and ECOM, have deeply studied what went wrong during 2009 A(H1N1) pandemic, showing that in that case communication was:

- mainly top-down, involving neither population nor healthcare professionals;
- did not succeed in dealing with uncertainty, notably in the first phases;
- lacked in flexibility, since their contents were not modified when the pandemic proved to be milder than it was supposed to be in the beginning;
- did not guarantee transparency, allowing rumours and charges of conflict of interest between health organizations and pharmaceutical industry.

A legacy of 2009 pandemic was therefore a decreased perception of risk about pandemic in the general population and this idea soon widened to all infectious diseases². The coincidence with the global financial and then more widely economic crisis occurring in those same years shifted the focus further from health issues to socio-economic threats.

As a result, at the moment, many people in Europe and USA keep on thinking that in 2009 WHO cried wolf, driven by pharmaceutical industry, that flu is a trivial disease and that pandemic flu is not a serious threat.

The recent response to Zika showed that the world is better prepared to emerging disease than it was in the past, but a lot must still be done. Gender and ethical issues raised by this crisis, affecting mainly pregnant women and their offspring, have not been adequately tackled yet.



¹ European Centre for Disease Prevention and Control. The 2009 A(H1N1) pandemic in Europe. Stockholm, ECDC. 2010.

² Walter D et al. Risk perception and information-seeking behaviour during the 2009/10 influenza A(H1N1) PDM09 pandemic in Germany. Eurosurveillance 2012; vol 17: Issue 13

ASSET PROJECT



In this scenario, **ASSET** project

developed an Action Plan including several initiatives and tools addressed to main groups of stakeholders.

All of these actions were aimed at an interdisciplinary involvement of different actors, enhancing dialogue and mutual knowledge both through virtual means (website, social networks, call-conferences, community of practice, bulletins and newsletters) and personal meetings (High Level Policy Forum, local initiatives, Geneve Festival, workshops and conferences).

A strong peculiarity of **ASSET** project was a simultaneous citizen consultation in eight different European countries (Bulgaria, Denmark, France, Ireland, Italy, Romania, Norway and Switzerland), with a full-day initiative of information, discussion and engagement of citizens in preparedness and response towards crises caused by emerging outbreaks, epidemics and pandemics.

ASSET represents a model of actions for other projects and stakeholders, by highlighting **6 main targets**, that can be addressed with specific objectives by possible tools of actions on pandemic and epidemic preparedness and response. All the actors involved in the process of preparedness and response to epidemic and pandemics need to be involved, but language, tools and contents of these actions need to be diverse.

We have defined these 6 groups of possible stakeholders, even if some of them include different actors with different roles in epidemics and pandemics, and an actor may be included in more than one group, as well:

1. International, National and Local Organizations and Authorities;
2. Healthcare Professionals;
3. Scientific Community;
4. Industry;
5. Media;
6. General Public.



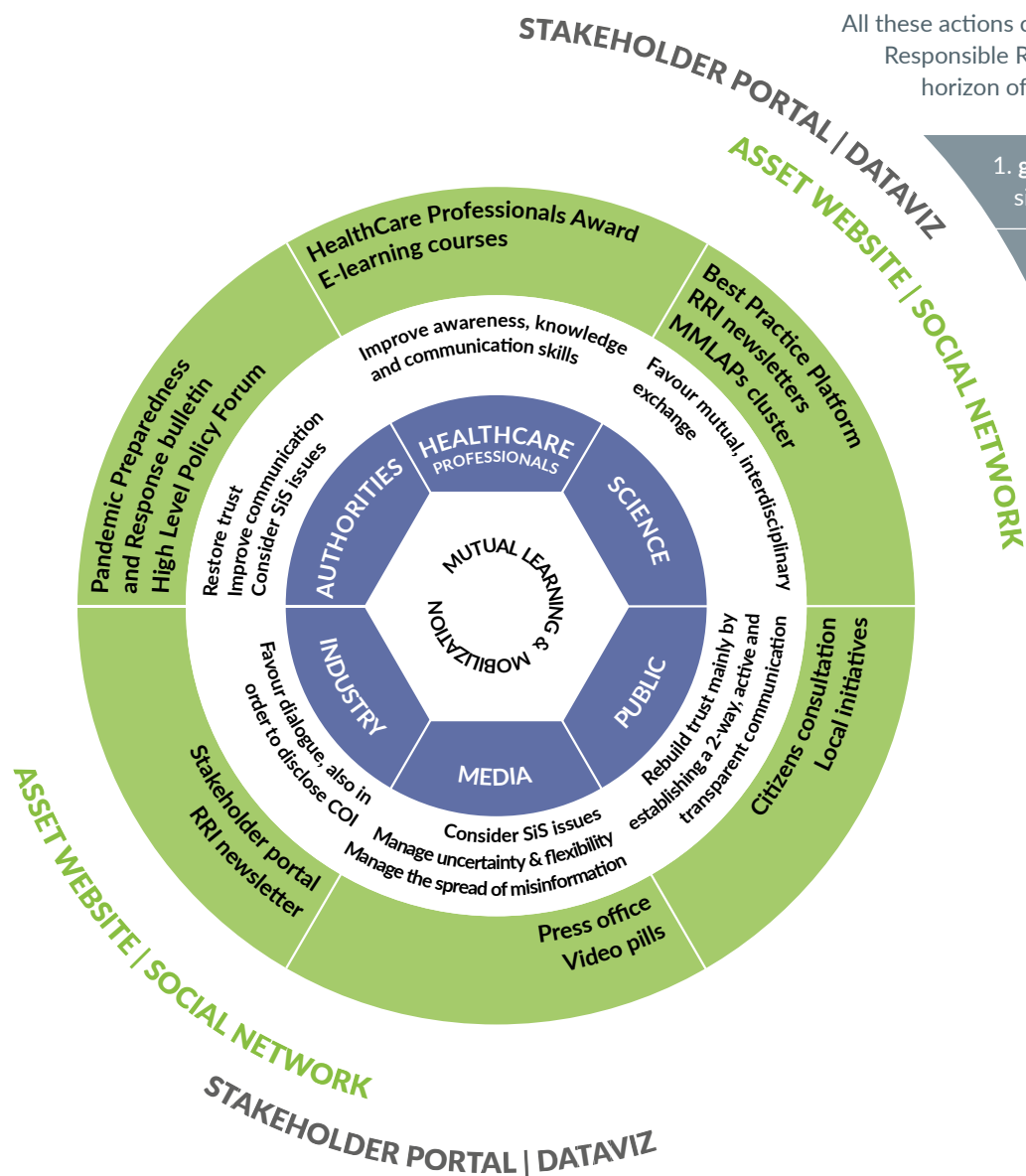


Toolbox

ASSET experts developed a virtual Toolbox, which mimics the real one carried by many workers. Such a box includes several instruments that have been used during the course of the project and made available on the website: from data visualization to a glossary of specific terms from different disciplines, from citizen participatory meetings to health reports by science journalists.



All these actions can be seen in view of **6 themes** of Responsible Research and Innovation within the horizon of Science-With-And-For-Society:



1. governance of flu pandemics and other similar crises;

2. unsolved scientific questions and open access on scientific outputs regarding influenza and pandemic situations;

3. crisis participatory governance;

4. ethical, legal and societal implications of pandemics and epidemics;

5. gender issues in pandemics and epidemics;

6. risk of intentionally caused outbreaks.

THE GOVERNANCE

During 2009 A(H1N1) pandemic and ebola epidemic in Western Africa, the World Health Organization, as well as national and other supranational agencies, were harshly criticized for the governance of the crisis.

Also in further emergencies (such as zika epidemic in Latin America), the relevance of a two-ways, participated communication and of including gender and ethical issues in the governance of infectious crises became even more evident.

One of the main objectives of **ASSET** project was bringing Science-in-Society issues to the attention of policy makers, by different means.

A report on Governance

ASSET experts prepared a report on *Governance of Epidemics and Pandemics*, which reviews the issue using 2009 A(H1N1) pandemic as a case-history from three interrelated perspectives:

- **World Health Organization**, which had revised the International Health Regulations (IHR, 2005) and strengthened its position as a central global force with authority and accountability in the field of international health;
- **Pharma industry**: Conflict of Interests (CoI) with health authorities and its potential impact on the decision making process held by health authorities;
- **Media**, regarded as the “watching dogs” who should have monitored governance performance during the 2009 A(H1N1) pandemic, examined analysing through WHO and the Centers for Disease Control and Prevention (CDC) virtual press conferences during the pandemic.

The High Level Policy Forum

ASSET gathered 15 members from different countries (Norway, Sweden, Italy, UK, Denmark, France, Israel, Bulgaria, Luxembourg, Romania, Ireland and Greece) in a High Level Policy Forum in which hot topics about pandemic preparedness and response could be discussed.

Email exchanges and three personal meetings (2 in Bruxelles and 1 in Copenhagen) allowed members to tackle with issues such as participatory governance of epidemics and pandemics, vaccination hesitancy and ethical issues in pandemic preparedness planning.

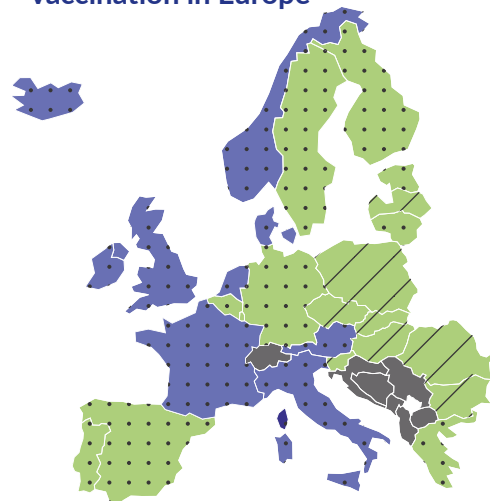
ASSET brochure: A Resource in case of Infectious Threats

By a leaflet addressed to European Public Health Authorities **ASSET** offered its research, expertise and tools to consider Science-in-Society issues in epidemic and pandemic preparedness plans, as requested by CE Decision 1082/2013/EU.

Share and move!

Six issues of a Pandemic Preparedness and Response Bulletin addressed to authorities and policy makers have been published, which include both activities and issues emerging from the project and other relevant news coming from other actors in the field.

Dataviz on compulsory vaccination in Europe



Measles vaccination coverage in EU/EEA in 2013.

Countries where vaccination is mandatory have been marked with a lined background, while those where the same vaccination is recommended have a spotted background.

Countries coloured in green have had an average higher vaccine coverage than the EU/EEA average – evaluated on all the countries over the period considered – while the coverage is lower than the average in the blue ones.

Meeting at the European Parliament

On 2017, 26th April, a Policy Workshop at the European Parliament presented **ASSET** project and the results of citizens' consultations organized within the project to members of Parliament of relevant committees.



SCIENCE: UNSOLVED QUESTIONS AND OPEN ACCESS

Following the proposals of the *Experts Groups on Science, H1N1 and Society*, designed by the European Commission, the **ASSET** project elaborated a **Reference guide of unsolved scientific related research questions** raised by the H1N1 pandemic and associated crisis management. Some relevant “unsolved questions” in the field of epidemics and pandemics related to society are:

- communicating science in presence of uncertainties, such as at the beginning of an outbreak;
- involvement of civil society to contrast the actual uni-directional decision processes with no feedbacks from the civil society;
- absence of compliance to the “epidemic intelligence framework” and low exploitation of data coming from new informal surveillance approaches;
- lack of involvement of GPs in the process of increasing the awareness of pandemics and negative attitudes of healthcare workers towards vaccines, for example;
- underestimation of the role of social networks to understand public perceptions and to disseminate information and increase knowledge and awareness;

- inter-disciplinary scientific approach to public health problems (e.g. scarce interest towards sociology, anthropology, behavioral mathematical models in epidemiology).

Paper series

Within **ASSET** project, a scientific paper series has presented various Science-With-And-For-Society issues in the form of an **open access scientific quarterly newsletter**. Experts in the **ASSET** consortium as well as invited authors have discussed them in the form of short communications on risk communication, social networks, national borders, democracy and human rights, etc.

Good examples

A section of **ASSET** website is dedicated to gather good and best “practices” on Science-in-Society related issues in public health research on epidemics and pandemics. This collection could help to:

- promote the good practices themselves so that they may become widely adopted;
- transfer knowledge of good practices among researchers, practitioners, institutions and organizations;
- develop best practice guidelines;

- validate best practice guidelines;
- disseminate and encourage adoption of “candidate best practice”.

Best Practice Award

The relationship between science and society is of great relevance in public health, but many persons operating in this field do not often acknowledge its importance. One of **ASSET** aims was to raise awareness of these themes among general practitioners in Europe and the tool chosen for this purpose was an award to give recognition to health professionals working in the primary health sector who have implemented an activity or intervention to improve the quality of communication with their patients and the local community active participation.



INTENTIONALLY CAUSED OUTBREAKS

While **terrorism** is becoming a serious threat all over the world, there is a growing concern about the possible misuse of biological agents to cause outbreaks.

To understand and tackle the main governance problems posed by this risk, **ASSET** carried out an analysis of the history, state of the art and policy documents concerning intentional biological attacks in a report on Intentionally Caused Outbreaks in democratic societies.

The main challenges are:

- about the tension between secrecy and transparency;

- about the freedom of research and security;
- about citizen involvement.

National and international authorities need policy documents well known among relevant actors and ready to be used in case of emergency, after having discussed the security and ethical implications of any measure before the crisis.

Attitudes of citizens in the area are also in need of exploration, for example considering the risk of the dual use of research results and what information they want to have about intentionally caused outbreaks.

ETHICS AND LAW

A person with symptoms of a possible infectious disease who, afraid of being stigmatised, refuses to seek medical care. An institution that hides information or undisclosed conflict of interest, or that provides drugs and vaccines without accurate and justified priorities – thus fuelling distrust in authorities. The choice of restricting people's freedom by quarantine to prevent the spread of an infectious disease.

These are just some examples of how ethics is deeply entangled with pandemic and epidemic response.

ASSET addressed main stakeholders to consider these issues in the debate on epidemics and pandemics, and to promote ethical best practices in the event of public health emergencies.

A report on ethical issues

The first step in this direction is represented by the **Ethics, law and fundamental right report**, a document produced by **ASSET** experts to provide an overview on these topics and to discuss them in the light of public health emergencies, such as epidemics and pandemics. The first part of the report presents the international policy landscape on what constitutes fundamental human rights, both at European and world level. However, sometimes priorities and needs in a state of emergency may come into tension with ethical principles and societal norms. This is the reason why another section of this report is dedicated to those key values that should always be considered when addressing similar issues:

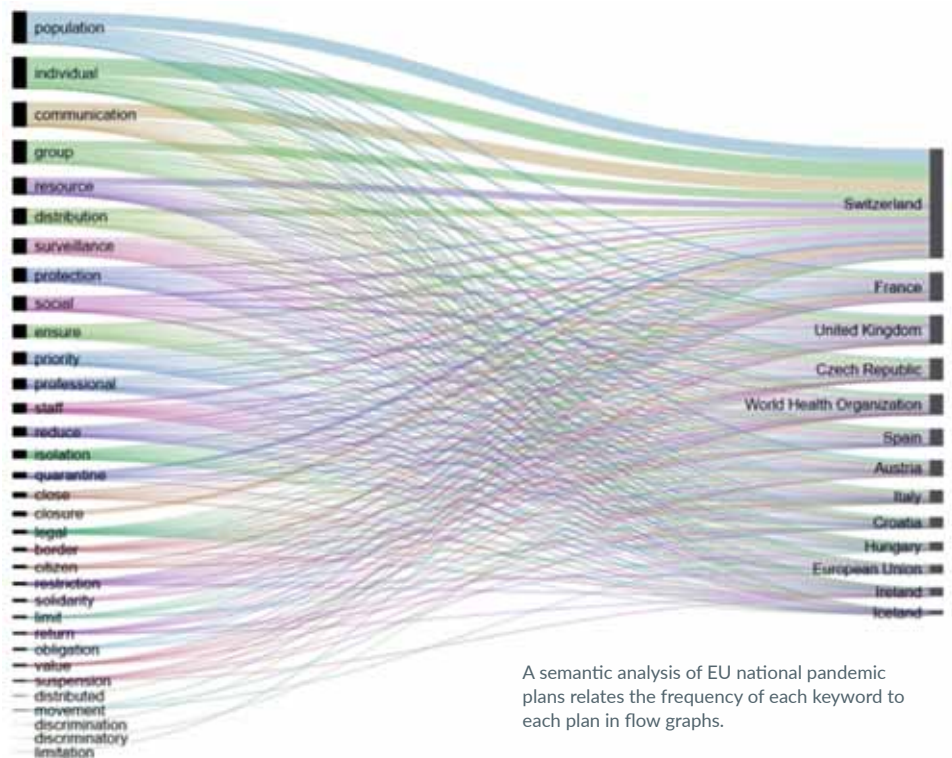
- restriction of personal freedoms;
- duty to provide care in pandemics;
- priority setting and resource allocation;
- international cooperation and global governance.

The final section of the report deals with two other issues with serious implications for pandemic preparedness and response. One is the risk of having individuals or entire communities that become the target of stigmatisation for a number of reasons, such as the perceived connection with the geographic origin of the outbreak in question, or their actual connection to perceived animal origins of an outbreak, and finally due to the fact that those individuals have actually become infected themselves. The other is the existence of vulnerable groups – such as pregnant women, children, people with disabilities, elderly people, the ill and the wounded – that should have priority access to first aid and any emergency evacuations.



The analysis of national pandemic plans

How are European countries dealing with **ethical issues** in health emergency plans? This is the question that led **ASSET** experts to analyse **national preparedness and response plans**. Their aim was to assess how often ethical principles and their application were mentioned in national pandemic and epidemic plans. And their investigation revealed little concern for ethical aspects and a lack of discussion on ethical issues in most of the plans developed by European countries. Only four of them – Switzerland, United Kingdom, Czech Republic and France – have a dedicated section to this topic, while others, like Spain or Italy, just mentioned them without any further discussion. **ASSET** analysis may represent a useful tool to guide future drafters of pandemic plans, since it aims at encouraging debate on the necessity to update all national pandemic plans including ethical issues.



A semantic analysis of EU national pandemic plans relates the frequency of each keyword to each plan in flow graphs.

GENDER ISSUES



Gender refers to socially constructed roles, behaviours, activities, and attributes that a given society considers appropriate for men and women. Sex refers to the biological and physiological characteristics that define men and women, boys and girls. This is a biological fact, defined by XY or XX chromosomes.



Sex and gender have a significant impact on how people prepare or react to epidemics and pandemics, since they may lead to differences in risk perception, vulnerability, health behaviours or even clinical trials efficacy.

For instance, females and males differ in their immunological responses to seasonal influenza virus vaccines, with the former having higher antibody responses to influenza vaccinations. This is particularly relevant, since both vaccines and drugs are mainly tested on men, so that we cannot be sure that in women they have the same safety and efficacy. Another example is that of pregnant women, who are especially at risk during an epidemic, due to unique factors connected to their conditions.

ASSET project faced this issue in two ways: by collecting evidence about the impact of gender and age inequalities with respect to infectious outbreaks; by disseminating and promoting gender-specific and women-centred research on pandemics.

A report on gender issues

What awareness exists of gender differences in vaccination? What communication strategies have been employed for vaccination take-up from a gender perspective? What kind of information policies do exist for groups

with particular needs in terms of gender, such as pregnant women or older women?

These are some of the questions that drove a research performed by **ASSET** experts, described in the **Report on gender issues**. They analysed the available literature and conducted interviews with stakeholders from various areas concerned with pandemics, epidemics, and vaccinations. They found that there is an evident need for a more gendered approach to influenza epidemics and vaccination, and produced a series of recommendations to address these issues.

A platform for dissemination

Sex & Gender & Vaccination is a platform that gathers contents and articles from **ASSET** experts, aimed to disseminate and promote gender-sensitive and women-centred research on pandemics. In particular, it aims to spread information on flu pandemics related risks, notably for pregnant women and infants, preventive measures, antiviral drugs, vaccines and vaccination, and make information available to women to enable them to make informed and responsible decisions.



Sex and gender in clinical trials

It is often said that sex and gender differences are perceived as overlooked in research design and in clinical trials, even those on vaccines. According to the World Health Organisation (WHO), many reports of influenza vaccination rates as well as the safety, efficacy and effectiveness of vaccines around the world do not disaggregate data by sex. Some **ASSET** experts performed a study to compare participation rates of males and females in clinical vaccine trials, finding no significant differences. However, the fact that only a minority of the trials disaggregated data by sex and gender is a highly relevant finding, for it indicates that such a distinction was

not perceived as important.

An interactive graph was also realised, to encourage viewers to estimate the percentage of

women involved in clinical trials and then comparing their guess with the real result.

PARTICIPATION | WEBSITE AND SOCIAL NETWORKS

Participation is one of the key element of democratic institutions. One of the aim of **ASSET** is to engage citizens in the debate on pandemic crisis prevention and management. Such a task requires several tools and a proper communication approach, which should flow back and forth between experts and the public.

The ASSET website

A project like **ASSET** could not work without a proper online platform. The **ASSET** website has been designed as a portal that not only gathers relevant resources and information on epidemics and pandemics, but also as a tool to facilitate dissemination and engagement. It is conceived as a hybrid between a magazine – with periodically updated articles that examine in depth some of the project topics – and an institutional website – with easy access to official documents, technical papers and recommendations from health authorities.

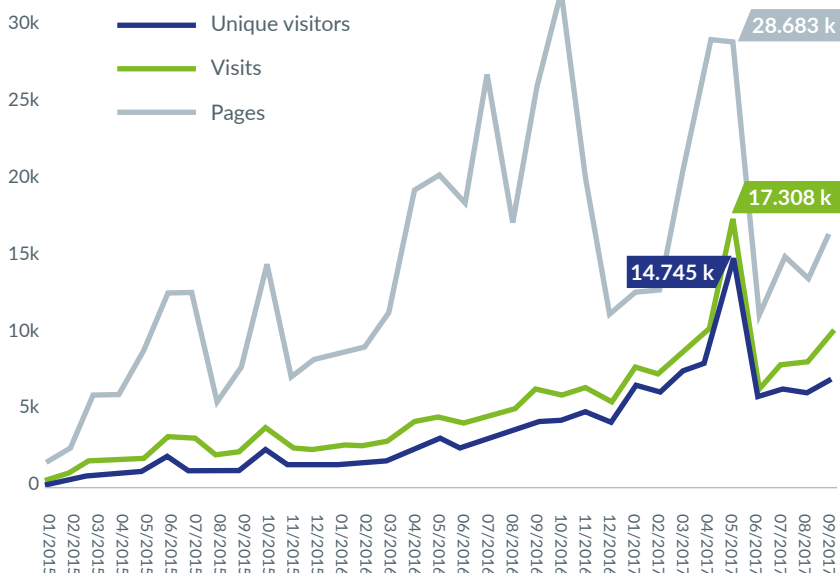
Aim of the website is to be approachable by all the different stakeholders **ASSET**

wants to reach, from general public to decision makers, from healthcare workers to scientists and journalists. The website collects several kinds of contents:

- the list of all **ASSET** partners;
- a series of articles produced by **ASSET** science writers and experts;
- a collection of video-interviews with experts in different fields related to epidemics and pandemics;
- link to **ASSET** social accounts;
- the Best Practice Platform;
- the Sex & Gender & Vaccination Platform;
- a collection of useful resources from scientific literature, health authorities and other related EU projects;
- all the products realized during the course of the project;
- a media section with a press kit, the project press review and all the press releases;
- access to the website analytics.

Trends in the number, type and geographical origin of visitors to the website are shown in a dedicated page, together with data from the Facebook and Twitter accounts. So far, the website has collected almost 15.000 unique visitors...

Website general report





ASSET in the social networks

The website alone was not enough to properly delve into the communication flow. A coordinated presence on social media was also necessary, since there users are constantly connected and interacting with one another, sharing ideas, files, and risk messages on a real-time basis, which enables them to evade institutional control of information. Exploring these dynamics is of great importance for a project interested in communication and engagement on a challenging topic like public health crises. **ASSET** has an account on Facebook, Twitter, and YouTube. **ASSET** experts used these channels to spread information but also to explore the public discourse online, for example to identify sources of misinformation and main opinion leaders (the so-called “influencers”) on themes like vaccines or conspiracy theories. This was done both manually by experts in social media analysis and automatically through an algorithm designed for this purpose.



PARTICIPATION | CITIZEN CONSULTATION

ASSET aims to provide inputs for the development of effective policies on pandemic crisis, and to engage citizens in the debate of public health crisis prevention and management. In order to do that, it was thus important to gather citizens' voice and bring it to authorities, and to establish a two-way participated communication with the public. With these purposes in mind, **ASSET** experts organised a citizen consultation to allow citizens to discuss and express themselves on some of the key topics of the project:

- personal freedom and public health safety;
- communication between citizens and public health authorities;
- transparency in public health;
- access to knowledge.

The consultation took place in the same day in eight countries partner of the **ASSET** project and involved 50 citizens from each country.

Rules of the consultation

Two different steps are required in order for deliberative democracy to work properly: a first information phase, which needs to be complete, transparent, honest and balanced, and a deliberative phase, in which citizens may vote to manifest their opinion.

The citizen consultation was based on a method developed by one of the project partners, the Danish Board of Technology Foundation (DBT). Such a method was inspired by the one used for World Wide Views, a global citizen consultation initiative that was used in some relevant

global occasions like the COP15 in Copenhagen, the Biodiversity COP in Hyderabad, and the COP21 in Paris. On the same day, in each of the eight countries involved, all participants met face-to-face. Each of these meetings followed the exact same format and were divided into five thematic sessions, introduced by information videos. Citizens were then presented with a set of questions with pre-prepared answering options and, in groups of 5-6, deliberated on the questions, assisted by a trained table moderator. Then, finally, citizens voted individually on the questions and

their votes were collected and reported to the World Wide Views website. At the end of the day, citizens were also given the opportunity to write comments or recommendations to the national and European policy makers.

Results of the consultation

Citizens were very satisfied with the consultation and would like the process to be repeated on different or similar issues. They provided policy makers with clear demands and thought-provoking insights. They asked for more transparency in the work of health



What is a citizen consultation?

The expression "citizen consultation" is part of an approach known as *deliberative democracy*, and refers to a wide range of activities that involve citizens in decision processes by asking them to express their opinion on specific topics. Born out of a growing concern for the environmental and societal consequences of industrialization in the 1960's, citizen consultations were mostly established in recent years. This is due to the rising awareness from politicians, scientists and stakeholders of the great opportunity, offered by these moments of discussion, of understanding population's viewpoints about subjects that strongly affect their lives.

96%

were satisfied with the process

94%

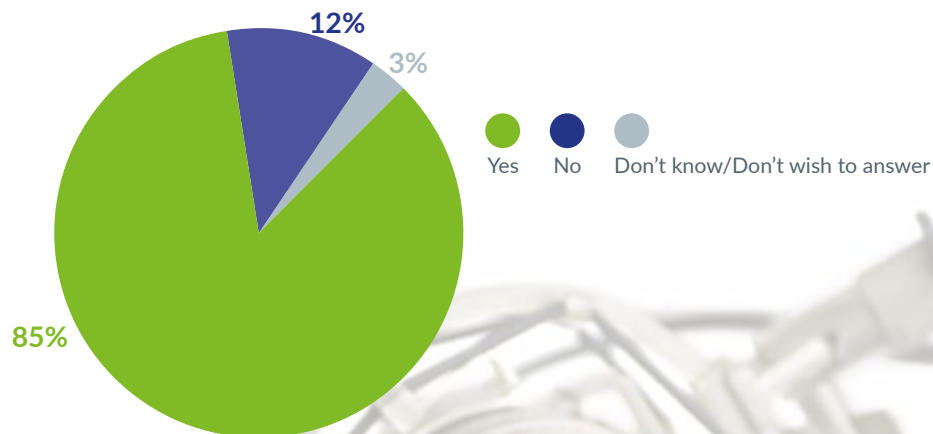
would like the process to be repeated on different or similar issues

81%

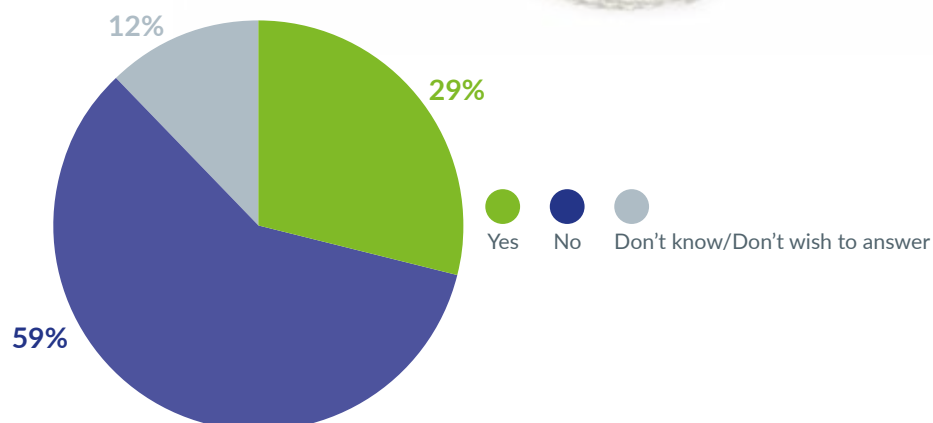
would like public health authorities to collect more information from citizen during threats

authorities and were not satisfied with the level of information provided during epidemic threats. Actually, less than half of the citizens were confident with information being withheld, even for security reasons by health authorities. Same goes for the satisfaction level during an epidemic threat. Some of the more remarkable results from the consultation included vaccination and information channels. While half of the citizens found mandatory vaccination as an appropriate tool for public health authorities during epidemic threats, more than eight-of-ten answered that it should be mandatory for health care workers. An insight that policy makers cannot overlook is that the citizen deemed internet as the least trusted information channel, and yet it is the one they consult first. When dealing with the principle of distribution of scarce resources like medicine during a pandemic outbreak, both men and women favoured giving priority to health care workers and other people working in important fields. However, women were more likely to prioritise high-risk groups than men. Citizens were also asked to encircle the most important words from the policy recommendations they wrote at the end of the sessions. These words have been translated and mapped according to the citizens' priorities through a specific analysis that produced a map showing that information, transparency and trust are of great importance for citizens. These results were presented at the European Parliament, in order to bring citizens' responses to the attention of public institutions and decision makers.

Should public health authorities make flu vaccination mandatory for health care workers in case of a pandemic or epidemic risk?



Are you satisfied with the information from public health authorities during epidemic threats like Zika?



74%

consider their family doctor as the most trustful source of information

82%

think that public services should be closed in case of a pandemic

88%

think that all relationship with vaccine manufacturers should be declared and publicly available?

PARTICIPATION | EVENTS

ASSET Summer School

Sharing and comparing ideas, learning different approaches, discussing and listening are all fundamental steps for a proper participation to develop. On these bases, **ASSET** organised three editions of a Summer School on Science-in-Society (SiS) related issues in pandemics. Aims of the courses was to exchange ideas about how to conduct and communicate research on these topics, and to address and critically discuss current discourses on research methodologies and findings, as well as on practice-based cases.

In all the three edition of the School, top experts or witnesses in the field gave interactive and participatory lessons, analysed specific and relevant case studies, and promoted the exchange of experience based on both study or practice. The **ASSET** Summer School was targeted to professionals with a background education and a working experience in several fields – medicine, public health, philosophy, social science, communication, health care, health economics, administration – and to PhD students undertaking courses of study in these areas.

Local initiatives

The response to a health emergency can vary from country to country, from region to region, based on a wide series of local factors. That's why **ASSET** has a global-scale purpose but also needs to be rooted at local level. Local initiatives were developed within the project, in order to experiment two-way communication at local level and to provide an opportunity



to local actors and stakeholders to feed the action with their contents and to co-design the action itself (so being different from pure dissemination activities). Such events took place in Athens, Brussels, Bucharest, Dublin, Geneva, Haifa, Lyon, Milan, Oslo, Paris, Rome, and Sofia. For example, in Milan Malpensa airport we involved airlines staff, police, health officers in a workshop about communication and ethical issues in infectious crises.

ASSET at the Verbier Festival

The Verbier Festival is the most famous classical music international event in Switzerland. On July 30th 2016, **ASSET** was there with a public workshop dedicated to Science and Music. A "Conference & concert" (open to the general public) was also organized, alternating talks about infectious diseases and a piano concert by the international artist Andrey Gugin.

Final event

Four years of studies and results need to be summarised and properly presented. A concluding conference was thus organised by **ASSET** experts to show the project's outcomes to European stakeholders and engage them in the discussion about such topics. The event was designed to enhance advocacy and an intersectoral approach, with the idea of making it a practical and usable model for stakeholders and other possible users, and maybe also a sample for future similar actions.

In order to improve the degree of engagement and knowledge sharing, **ASSET** members also organised a **brokerage event** in conjunction with the conference. It was conceived as a moment in which coordinators of European projects, focused on similar challenges – from health to demographic change to wellbeing – or common methodology, can meet and present the most significant aspects of their activity.



CONCLUSIONS

In four years of work, **ASSET** has verified what a great challenge is to develop a common language among actors with different scientific and professional background. The exchange among partners and other stakeholders met in the course of the project has shown how fruitful this multidisciplinary dialogue can be and that it would deserve further efforts in order to better tackle with old and new emerging diseases.

Social psychology and risk communication, as well as computational, social network and big data analysis, can add important information to virology, microbiology, immunology and vaccinology so that preparedness and response can be improved in the future.

Despite the great effort needed to enhance a dialogue among different EU-funded projects, ten of them present and cooperate at the **ASSET** Brokerage event, on 30th-31st October 2017 in Rome.

The experience of **ASSET** citizen consultations has confirmed the willingness of general public to be involved in pandemic preparedness and response, and the importance of providing it with transparent and complete information before asking its opinion.

ASSET analyses have shown that lessons learnt from previous epidemics and pandemic about the relevant role of engaging society, considering ethical and gender issues and developing an inclusive risk communication are hardly put into practice even by most national pandemic preparedness and response plans. Steps forward will hopefully be taken following CE Decision 1082/2013/EU on serious cross-border threats to health, which requires every three years all member states to provide the Commission with an update on the latest situation with regard to their preparedness and response planning at national level.

Horizon 2020 with its Science-With-and-For-Society program acknowledges that there is still a lot of work to do. It is needed to allow “all societal actors (researchers, citizens, policy makers, business, third sector organisations etc.) to work together during the whole research and innovation process in order to better align both the process and its outcomes with the values, needs and expectations of European society”.

A good job has been done by **ASSET** and other EU-funded projects, but there is still a long way to run before getting to a more prepared, resilient and fair society, also in front of infectious crises.



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villa@zadig.it



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