Risk communication on vaccines during the COVID-19 pandemic: is there room for small size or private initiatives? An Israeli experience

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Abstract
The scientific communication landscape has undergone a significant disruption since the COVID-19 pandemic: a huge number of publications, ample use of preprint publications, a fast-spreading digitalized information. This reflected the unprecedented speed of the research on disease and vaccines. Two kinds of infodemic blew up very soon: a scientific and a tabloid one. With knowledge evolving continuously, governments and institutions deployed their communication campaigns very quickly to explain the different measures, including the vaccination strategies and to fight against infodemics. The need for a more focused population, the French-speaking community, arose spontaneously in Israel, leading to the creation of a Vaccine Task Force, independent, multidisciplinary, and composed of 20 high-level volunteers, physicians, pharmacists, and scientists, which provides evidence-based information, open and free, to healthcare professionals and the public, both most in demand, and then the experts’ meetings in Israel and abroad. Current resources: 40 webinars, all recorded and accessible on the association website, questions and answers, press and scientific literature review, and hotline; communication through the website, social media, and audio-visual media. In French, English, and Hebrew. The team undertook to explain the role of Israel in vaccine rollout and real-world data provision to the international community, both in Israel and abroad. Performance indicators are as follow: attendees’ number (~3000), website frequentation (7200 +) social media followers. In conclusion, this information campaign requires no budget; relies on volunteers who expressed their willingness to contribute to the global effort, as seen all over the world; and uses simple, cheap, and ubiquitous IT platforms. The Task Force created ERANIM, the Israel Society for Medication and Vaccines Safety. This scheme could easily apply for minorities or for medium/low-income countries, using the resources available in WHO, Vaccine Safety Net, health agencies, and academies. Key factors are multidisciplinary, influencers belonging to communities, and a network of partnerships.

Plain Language Summary
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Background: The scientific communication landscape has undergone a significant disruption since the COVID-19 pandemic: a huge number of publications, ample use of preprint publications, a fast-spreading digitalized information. This reflected the unprecedented speed of the research on disease and vaccines. Two kinds of infodemic blew up very soon: a scientific and a tabloid one. With knowledge evolving continuously, governments and institutions deployed their communication campaigns very quickly to explain the different measures, including the vaccination strategies and to fight against infodemics.
Background
The outbreak of the COVID-19 pandemic has blown up the usual patterns in many fields, including in the scientific communication landscape.

With the objective of rapidly disseminating the results of research, scientific publications have rocketed to an unparallel pace at 125,000 COVID-19 related papers within 10 months of the first confirmed case, of which more than 30,000 were hosted by preprint servers, an unprecedented rate.\(^1\)

On 21 November 2021, a quick search on Google Scholar shows a result of 56,000 research papers on the COVID-19 Vaccine.

The nature of the pandemic, the disease dynamics, the many waves, and the permanent changes in the understanding of the disease have made the communication event more complex.

Some of the many challenges were the necessity to remain flexible, continuously adapting the discourse to new understandings, and being able to reassess constantly the benefit-risk balance as was illustrated with the thrombosis with Astra Zeneca vaccines or myocarditis with the mRNA vaccines.

Adding to this proliferation and complexity, the use of digital media had allowed the dissemination of any information at light speed.

In parallel, a communication tsunami of fake news started very early, spread sometimes by respected figures, leading the WHO President to warn that the infodemic was more dangerous than the pandemic itself.

The infodemic has two faces:

- **The ‘scientific infodemic’**: renowned scientists using their position to warn against the dangers of vaccines: cancer,
DNA manipulation and more, all very present in audio-visual media; or articles by healthcare professionals, describing in scientific language the risks of vaccines. This infodemic was the most dangerous and convincing, thanks to the apparent seriousness of their claims and the prestigious position of their author. It was the breeding ground for general press journalists to provide fake news.

- **The ‘tabloid infodemic’:** the level of the fake information was so low and gross, and originating from tabloids and non-scientific authors, that it targeted mostly less educated people, for instance, the myth of the 5G chip in the vaccine.

What kind of infodemic is easier to fight? Which of the targeted people is more prone to being convinced by myths’ debunking? These questions still need to be answered.

The reaction to infodemic was the multiplication of fact-checking websites certified by RAND corporation, in many languages, which makes the task easier for myth debunking.

It was thus an unprecedented communication landscape to address the COVID-19 pandemic.

The main objective of the ERANIM’s initiative was to support the institutions and health authorities in their communication on COVID-19 and COVID vaccines and to target populations whose mother tongue was not Hebrew and therefore with lower access to institutional information. ERANIM’s approach is also to provide more detailed information than institutional communication, even to the large public and in lay language: for instance, in the webinars, we explain the main mechanisms of the immune system and vaccination reactions, the DNA-RNA-protein pathway, the different phases of vaccines and drugs development, the safety and efficacy as described in clinical trials, and the missing information at the time of the first vaccination.

What kind of targeted risk communication should be set up?

- **Scientists**
  It should have been already a challenge to command the amount of information and pick the most relevant one. The scientists have access to scientific journals and to large literature databases; they have experience in browsing the Internet and organizing their search with keywords. Therefore, neither risk communication nor infodemic was an issue for this target.

- **Healthcare professionals and workers**
  Already overwhelmed by their daily practices and with a very short time for identifying and reading papers, the task was very difficult, but necessary to answer their patients’ questions. They don’t have access to many scientific journals or to literature databases. They are not used to browsing institutional websites such as FDA or EMA. They are not familiar with the marketing authorization processes.

There are three main challenges for this population:

- The number of articles
- The very specific language which is not fully commanded by practitioners and workers: genetics, virology, epidemiology, immunology.
- The “scientific infodemic”

Therefore, the need for this target was to focus on the most relevant articles, i.e. the papers answering the main questions they must address, to summarize the main messages in a simpler but still scientific language, and to analyze point by point each claim.

- **General public**
  Some general press journalists, for example, in the New York Times have excelled to present a clear and honest information to the public, while some journals have made their specialties in pinpointing the most scandalous and frightening information.
  For the public, between media and institutional communication, it was hard to understand what was going on.
  The unprecedented situation of lockdowns and restrictions was increasing fears and anxiety, leaving many people in front of their computers, trying to find explanations. The very quick access to vaccines has triggered both hope with magic thinking and fear to serve as guinea pigs.
The challenge for this target population was to explain complex concepts in lay language, to be fully transparent about knowns and unknowns, and to answer point-by-point all infodemic claims.

Therefore, it was soon obvious that simple and clear communication was necessary not only to ensure compliance with the health institutions’ recommendations – social distancing, lockdowns, vaccination – but also to fight the infodemic.

This twofold task was rapidly overtaken by health agencies and other institutions such as WHO and many more, all over the world.

Private initiatives versus institutional: the Task Force’s initiative
At the same time, all the people with expertise in pharmacovigilance, epidemiology, immunology, and virology have asked themselves if there was room, or a need for private and/or small-sized groups’ initiatives. With such a plethora of information, will they bring something new?

ISOP ISRAEL, the Israeli Chapter of ISOP (International Society of Pharmacovigilance) discussed this question at the beginning of the pandemic.

ISOP is a professional association very focused on an expert field, what should be its target audience? The exchange of information between ISOP expert members was not assessed by the Task Force as relevant enough to address this exceptional situation.

What triggered the Israeli Chapter’s information campaign?

Starting early December 2020, just before the vaccination started, a long but didactic presentation by the Israeli Chapter was attended by 200 people and was followed by so many questions that it triggered the decision to launch a large information campaign.

For doing so, within a month and following a call for support in the cloud, the Task Force was gathered in January 2021, with 20 volunteers, high-level physicians, pharmacists, and scientists. Our fields of expertise cover: pharmacovigilance, pharmacoepidemiology, virology, laboratory medicine, immuno-hematology, molecular biology, molecular genetics, veterinary, cardiac pediatric, intensive care, cardiovascular and thoracic surgery, neurosciences, general practitioners, engineers, webmasters, translators, social media, press review, and administration. Choosing to go much beyond the usual scope of ISOP, the Task Force’s mission was to provide healthcare professionals and the public with evidence-based information on COVID vaccines and COVID-19, and to fight back against infodemic.

The COVID-19 pandemic was so unpredictable that it was not possible to assign any time frame for this initiative. The main objective being to provide clear information to several target audiences, it was decided that the initiative would go on till the end of the pandemic. It means that the Task Force is still working and providing information in July 2022, adapting its pace according to the waves’ decrease and increase, but as a minimum performing the literature and dashboard survey.

The Task Force’s policy was to provide free access, as opposed to the ISOP policy, which limits attendance to ISOP members. This difference of approaches led to the creation of ERANIM, the Israeli Society for Medication and Vaccine Safety, a fully independent association.

The first target: the French community in Israel
By pure chance, the target audience came to us, expressing a need and requesting our support. The answer came very unexpectedly from small circles of French-speaking non-professional contacts and healthcare professionals, through the channel of a cultural association.

This specific part of the Israeli population faced two challenges:

1. The difficulty to understand the complex principles of the vaccines in Hebrew or in English
2. The confusion brought both by the institutional hesitancy and the huge infodemic in France where they continue to find their source of information.

Our first objective was to provide scientific information to the French community, both public and healthcare professionals, to fight against
infodemic especially those coming from the French media. However, this first objective was soon extended to a larger audience, and the questions and answers, as well as the articles, were written in both languages, English and French, very early in the project.

A second objective was to share with experts in pharmacovigilance and pharmaco-epidemiology the way Israel was handling the crisis, the vaccination strategies, and the epidemiologic results. At a time when researchers all over the world were sharing their experience, ERANIM contributed to informing its international network of experts on the way Real World Data were and still are collected and used for strategic decisions not only in Israel but also by many health authorities abroad, such as the FDA and many other health agencies.

So, the communication started with the French community, but very quickly the Task Force spread its activities in English, toward the international scientific community, and to a lesser extent, in Hebrew, where the need was already addressed by the Ministry of Health, the four HMOs, and associations such as Midaat, a Vaccine Safety Net member.

The COVID 19 information campaign: results

Our information campaign took several paths to address different targets.

Within a year, were set up:

- 40+ webinars for healthcare professionals and professional associations, for the public, for high schools, or institutions, but also for experts in Pharmacovigilance. Among them were created several series such as: COVID Vaccines Around The World, Drug Safety in the COVID Era, COVID Vaccines Vigilance, Tell us a safety story.
- TV and radio interviews
- Questions and answers in lay language
- Scientific articles
- General press review, twice a week through WhatsApp groups
- Scientific literature review through WhatsApp groups
- Hotline: answering questions from healthcare professionals and public

The literature and general press survey is performed daily by 13 people. However, the whole Task Force, even the nonscientists, was involved in sharing a general press review. It has happened frequently that a general press article allowed to find the scientific article to which it was referring.

Finding scientific and general articles was quite easy given the number of publications and did not require an accurate index search. Serious general newspapers were quickly identified, such as The New York Times, and then they were screened daily. The free access to the main scientific journals allowed email alerts and subscriptions. Among them but not only: Nature, New England Journal of Medicine, the Lancet, and the CDC literature survey. LinkedIn was also an important source of scientific articles. All these journals have a special section dedicated to COVID, which simplifies the search. Many health authorities were an important source of information. US CDC, ECDC, WHO, FDA, EMA, MHRA...

The articles were shared on the Task Force WhatsApp group, and discussed, and the more relevant ones were shared either in English or in French with our subscribers on the two WhatsApp groups: ERANIM Chronicle and la Chronique ERANIM.

Information about the Task Force’s resources was spreading through a dedicated website and social media presence–Facebook, LinkedIn, YouTube channel, and newsletters–mainly in French and English, and a few times in Hebrew.

From word of mouth, the Task Force was contacted by several professional associations to organize webinars: in Israel, the French physicians’ association (MEDIF), the Magen David Adom (affiliated to the International Red Cross), the Machon Puah (specialized in fertility), and in France by the association OSE, the National Academy of Pharmacy and the Think Tank Freedom and Prospective composed of European deputies and French ministers.

One year later, supported by many testimonials, the Task Force created ERANIM, Israel Society for Medication and Vaccine Safety, which continues the same activities. Israel’s specific role in crisis management and vaccination rollout.
In Israel, this crisis management was especially striking with the implementation in a record time of telemedicine, use of robotics, sensors, virtual reality, use of AI and big data, led by Sheba Medical Center but also by most of the big hospitals in the country. At the same time, Sheba organized many webinars to share their experience and crisis management with of the international community. It was a good previsualization of the Medicine of the Future, which was happening now and here.

Starting on 19 December 2020, Israel took the world leadership in terms of the vaccination rollout. Its pace and scale have ranked Israel the first one to achieve the full immunization of 80% of the eligible population within 3 months, as can be seen on the Ministry of Health dashboard.

Early in the pandemic, the Ministry of Health adapted its IT system to allow a better centralization of the data from the four HMOs’ electronic medical records. With 90% of the medical data digitalized in the electronic medical records from 25 years, the central epidemiologic database was able to publish the first Real World Data on efficacy on the Pfizer BioNTech vaccine, confirming the results of the clinical trials.

It was also the 1st country to identify the risk of myocarditis in young males, which took 2 months for the FDA and EMA to confirm. The early decision for the 3rd jab in July 2021, and then the 4th jab in January 2022, was also led by the Israeli data, a strategy now followed all over the world.

A centralized epidemiologic database is not a feature that can be seen in most countries, and this has allowed the analysis of the epidemiologic data in rocket times on the vaccination efficacy and safety, on waning immunity 6 months after the 2nd dose, on the 3rd and 4th jab.

Together with quick decision-making, audacious strategies, and epidemiological strength, suddenly Israel was under the spotlight, and took the center stage to share Real World Data which impacted decision-making in many countries, such as the US and EU.

With Israel taking the position of a pilot country, the need for communication was even more urgent inside Israel but also abroad to spread the results of the Israeli strategies.

The Task Force undertook the mission to provide the keys to understanding this technological and organizational evolution first, and then to explain and support the government’s vaccination strategies.

**Performance indicators**

Measuring the performance of all of these activities is not easy. However, some of the Key Performance Indicators are the following:

- The number of attendees to the presentations: more than 3000
- The social media followers
  - 200 for WhatsApp groups,
  - 500 followers on Facebook,
  - 6400 on LinkedIn
  - ~5000 views on YouTube
- Website frequentation: 7326 site sessions, 1244 registered contacts, from 115 different countries

Few criteria are not easy to quantify but quite significant in their meaningfulness:

- The number of people who testified to being vaccinated right after a presentation, among them, community’s leaders who convince their whole community to vaccinate
- TV and radio interviews impact
- Peer recognition
  - The association ERANIM ISRAEL has been accepted as a member of WHO Vaccine Safety Net, a global network of 101 websites that provide reliable information on vaccine safety: among the members: US CDC, The American Academy of Pediatrics, John Hopkins School of Public Health, Brighton Collaboration, Paul Ehrlich Institute
  - The author, physician, and chairman of ERANIM, was elected a member of the French National Academy of Pharmacy as Foreign Correspondent for Israel.

**Conclusion**

Two different conclusions could be driven from this Israeli experience. The first one is the results of the Israeli experience, and the second is how much this initiative can be reproduced.
The information campaign results
Although on a small scale, the information campaign has addressed several issues:

- **The target**
  - Scientists/experts, healthcare professionals, and the public.
  - The French-speaking community in Israel and several professional and non-professional groups in France.
  - Equal part of Israeli and international attendance.
  - Three languages: French, English, Hebrew

- **The content**
  - Information in lay language and scientific languages.
  - Myth debunking both in the scientific and tabloid infodemic.

- **The resources**
  - Use of all the social media. Internet technologies, audiovisual and written resources, to diversify the access to information.

- **The team**
  - Using the huge potential of highly skilled volunteers, some of them retired, which express their strong willingness to contribute to the global effort. Voluntary work in Israel is widespread and inherent to the culture. The experience was so rewarding that the whole team, and even new members, continue the information campaign, and ERANIM has enlarged its scope to polio vaccines, Monkeypox, Children hepatitis.

- **The budget**
  - It is worth mentioning that the Task Force and ERANIM are fully independent and not supported financially, meaning that the expenses are limited to the website domain and provider, the mailing tool subscription. Membership is free.

Lessons to be learned
Is a small size/private initiative making any difference in the communication impact? The audience is a niche, which is less targeted by institutional communication or less accessible. Thanks to this action, the audience could better understand and take wise decisions for themselves, their family and their communities. Taking into consideration that 35 languages are spoken in Israel, there are perhaps other communities that could benefit from similar actions.

What has made the strength of the Task Force was the multidisciplinarity: risk communication cannot be the exclusivity of pharmacovigilance experts, to be efficient the communication needs the involvement of media specialists, engineers, and scientists coming from different backgrounds: immunology, virology, molecular biology, molecular genetics, epidemiology, regulatory affairs, industry . . .

A multidisciplinary team can therefore present different angles of the situation and, as is well known in communication, the same message repeated in a different way by different people could give a different look and convince more people.

The use of IT technologies that allow quick information spread cannot be seen as an obstacle, as many platforms are designed in such a friendly way that only a short adjustment is needed by non-IT people; they are widely used by the population, starting with Zoom, WhatsApp social media, Wix, or any other website platform.

Another factor is the fact that the whole Task Force belongs to the targeted community, and it is well known that a good communication strategy must target the influencers, community leaders, and renowned figures to ensure a good impact.

This model can easily be reproduced for the minorities in any country and is one of the recommended strategies by WHO.

Can a small or medium-low-income country reproduce this scheme? The association ISOP ISRAEL now ERANIM ISRAEL has no sponsor. The whole campaign was performed without any budget.

Faced with the pandemic, many volunteers wanted to help and support using their background, people in activity, and retired people. Good wills arose all over the world during the pandemic. What is needed is the coordination of actions and to ensure that the information is evidence-based. The Task Force editorial policy was very strict with peer review and reference quoting, which eventually led to the approval by
Vaccine Safety Net as a website providing reliable information.

Vaccine Safety Net\textsuperscript{21} provided the Task Force with a list of reliable websites that were the backbone of all activities, meaning that there are many resources that can be used without reinventing the wheel. It could be just a matter of translation, or adaptation to the local culture. CDC,\textsuperscript{22} WHO,\textsuperscript{23} and many more, provide videos and infographics that can used everywhere.

The WHO developed trainings on infodemic,\textsuperscript{24} which can support a small entity to be more efficient.

The Task Force relies upon many collaborations and partnerships. The exchange of resources could be a good way for ERANIM to support, in its turn, small entities, sharing documents and experience and receiving feedback to improve its communication.

**Declarations**

**Ethics approval and consent to participate**
Not applicable.

**Consent for publication**
Not applicable.

**Author contributions**

Irene R. Fermont: Conceptualization; Methodology; Project administration; Resources; Supervision; Writing – original draft; Writing – review & editing.

Ayalah Livneh: Methodology; Validation; Writing – review & editing.

Michel Benhamou: Writing – review & editing.

**Acknowledgements**

Members of the Vaccine Task Force ERANIM Israel for their strong dedication to the information campaign, who have made possible this experience

Ayalah Livneh MD; Virology, Hadassah Medical Center, Jerusalem, IL.

Menahem Bregegere Ph.D., Molecular Biology & Genetics, previously CNRS Director, Paris, FR.

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Grazia Benichou MD, Occupational Medicine.

Carine Kamoun MD, general practitioner, Meuhedet, IL.

Irene Fermont MD, MSC, immuno-hematology, pharmacovigilance IL, Chair.

**Funding**

The authors disclosed receipt of the following financial support for the research, authorship,
and/or publication of this article: ERANIM Israel is a nonprofit organization and is not funded by any institution or company. All the Task Force Members are volunteers and no one received a salary for this project.

**Competing Interests**
The authors declared the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article: All the authors are members and cofounders of ERANIM Israel. I Fermont and A Livneh are members and founders of ISOPISRAEL. The authors express the two association’s positions.

**Availability of data and materials**
Not applicable.

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