

## Case study

### Innovative concepts to communicate science

DURING COVID-19

#### Contributor

Harding Center for Risk Literacy and Robert Koch Institute

#### Country of implementation

Germany

#### Start date of the initiative

December 2020

#### Track

Science communication by researchers

#### Target audience

General population

#### Website

[www.hardingcenter.de](http://www.hardingcenter.de)



# Evidence-based risk communication using fact boxes on mRNA-based COVID-19 vaccines

## Summary of the initiative

One of the tools to improve the coronavirus disease (COVID-19) vaccine risk perception and reduce uncertainty is the dissemination of transparent, comprehensible, balanced and fact-based information. However, people have been overwhelmed with information, some of which is false and misleading, especially online. To promote evidence-based decision-making, this project has produced easy-to-understand fact boxes providing objective information on the risks and benefits of messenger ribonucleic acid (mRNA)-based vaccines against COVID-19. The project aims to facilitate evidence-based conversations and informed decisions about vaccination.

The fact boxes are developed for mRNA-based vaccines for two age groups: adults under the age of 60 years, and adults aged 60 years and older. The fact boxes feature:

- a description of the reference group, for example: adults under the age of 60 years;
- the most relevant end points of the benefits and harms of vaccination for a given age group, for example: the chances of contracting COVID-19;

- two groups of the same denominator with the same reference group, for example: 1000 vaccinated adults under 60 years compared with 1000 unvaccinated adults of the same age group;
- numbers are shown as absolute risks;
- a short summary or additional note explaining typical and rare side effects of vaccination;
- sources of the information; and
- date of last update.

The fact boxes are accompanied by questions and answers that address the following:

- What COVID-19 is;
- How vaccination against COVID-19 with an mRNA vaccine works;
- Who may consider vaccination;
- What other measures help prevent infections; and
- How well can a vaccinated person protect others.

Above photo by Braño on Unsplash.

## Context and relevance of the project

The project was initiated by two institutes with expertise and longstanding experience in public health: The Harding Center for Risk Literacy and the Robert Koch Institute, Germany's national public health institute. The initiative set out to address the:

- inadequate availability of evidence-based information on COVID-19 vaccination;
- lack in communicating risks and uncertainties on vaccination to the public; and
- scenario where large number of individuals felt insufficiently informed about COVID-19 vaccines.

## Summary of the analysis



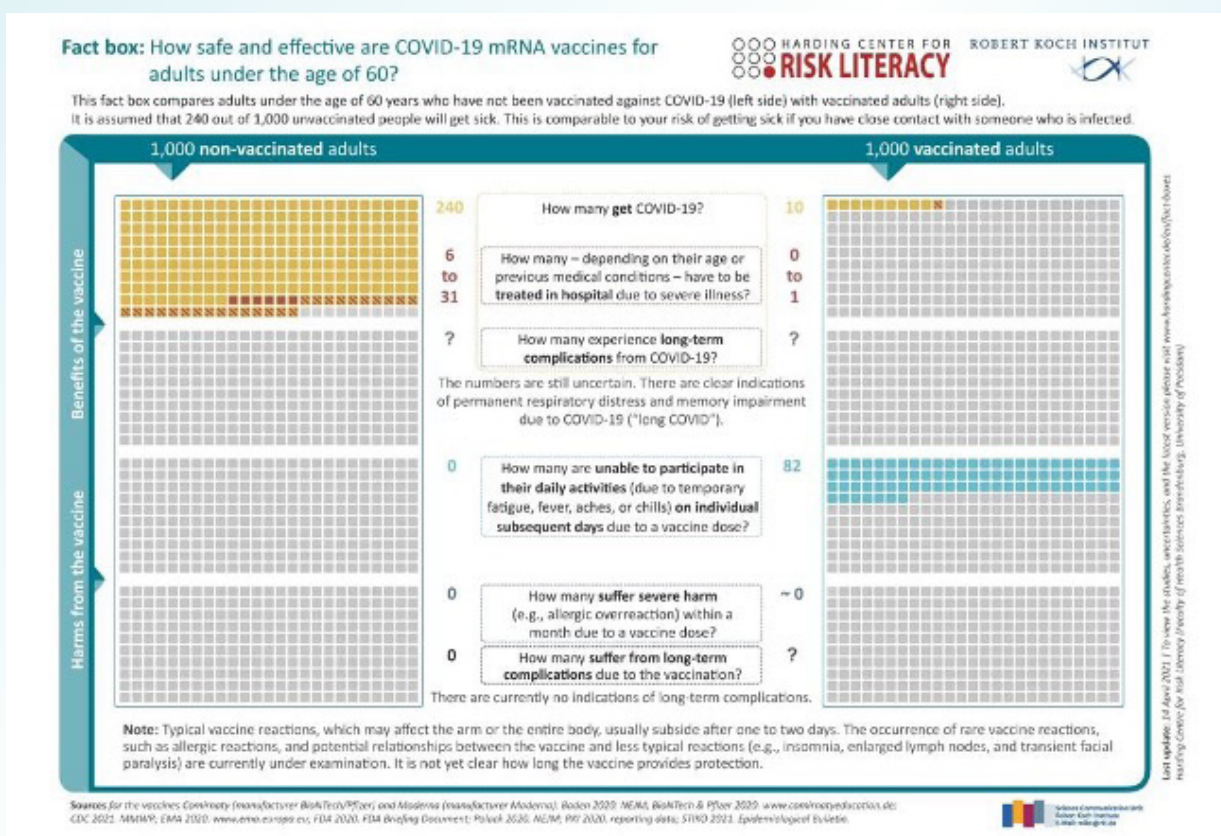
### Innovation factors

Studies have demonstrated that fact boxes can help increase knowledge and understanding related to a variety of health risks. The initiative is innovative as it uses a proven knowledge translation tool to address issues arising during the pandemic in a timely and non-judgmental manner.

While communication efforts often focus solely on the benefits of vaccination and may even nudge the audience towards a specific decision outcome, the fact boxes refrain from persuasion by putting objective, balanced and transparent information at their core. This includes a comprehensive information approach including:

- advantages of getting vaccinated vs. non-vaccination in terms of getting COVID-19;
- consequences in terms of hospitalizations and long-term consequences of staying unvaccinated; and
- adverse effects due to vaccination.

This enables people to judge for themselves whether the advantages of vaccination against COVID-19 outweigh the risks in most cases. The presentation of statistics in an easily understandable format reduces uncertainties and improves risk perception of benefits and harms for lay audiences.



## Accuracy of scientific information

The project team has used multiple, reliable sources for information displayed in the fact boxes. The references are clearly provided at the end of each of the fact boxes, which were developed based on:

- a systematic literature review provided by the Standing Committee on Vaccination in Germany;
- vaccine approval reports of the United States Food and Drug Administration; and
- results of the original Phase II and III clinical trial publications.

Systematic literature searches were done for the scenarios presented in the fact boxes, especially for updates.

Evidence was collected by the Harding Center for Risk Literacy and reviewed by subject experts at the Robert Koch Institute. Any resulting questions were resolved through discussions between the teams.



## Impact on knowledge, attitudes and behaviour of the target audience

The project team conducted two studies to evaluate the effectiveness of fact boxes for vaccine communication with lay audiences, both showing benefits of the fact boxes.

Study 1: An online experiment was carried out with 719 participants to investigate whether vaccine fact boxes improved COVID-19 risk perception. The findings revealed that the fact boxes improved perceptions of disease risk (elicited by self-report ratings), compared with a control presentation (information that was not evidence-based). Only the control presentation increased both fear and perceived severity (self-report ratings) of developing the disease.

Study 2: The team compared a group of 1942 participants who received fact boxes on mRNA-based vaccination with a group who did not receive the fact boxes, and assessed the effect on vaccination knowledge and evaluation. The results showed that the vaccination knowledge (sum score) was higher after fact box presentations. Sceptical and uncertain participants who comprehended the fact box arrived at a more positive evaluation of the benefit-harm ratio (self-report rating) of vaccination.

Other impact evaluation indicators of the fact boxes include publication on various webpages, including:

- the Robert Koch Institutes website with 130 million views in 2020,
- fact boxes mentioned in 22 news articles, and
- information tweeted and retweeted by significant individuals such as the German Minister of Health.

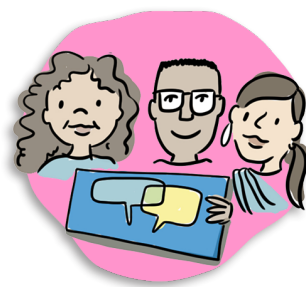
## Gender equality, equity and human rights considerations

The project targets a diverse user group, with a specific emphasis on the general population aged 18 years and above. By utilizing numeric values instead of long narratives, the fact boxes are comprehensible for all literacy levels.

During the development process, the needs of audiences (e.g. information on potential long-term harms) with different vaccination intentions, especially those who are skeptic or undecided, were explored and taken into account.

The team improved accessibility by involving people with lower formal education levels in the development of the content. After the launch, the team has continuously obtained user feedback through various methods including psychological experiments, semi-structured interviews, representative surveys, and cognitive interviews.

To reduce language barriers, the fact boxes are available in nine other languages besides English and German, such as Arabic, Bulgarian and French, to provide equitable access to the information.





## Limitations

The rapidly evolving evidence on COVID-19 and response measures including vaccination pose a challenge to the provision of constantly accurate and up-to-date information. Besides, as vaccination against COVID-19 is very recent, there is still a scarcity of reliable data and often heterogeneity in results across studies from different contexts. This impedes the certainty with which the evidence can be presented, which may be confusing for people with lower scientific literacy and cause scepticism or concerns.



## Looking forward

The team is evaluating the comprehensibility and feasibility for informed decision-making using fact boxes in the context of cognitive interviews with vulnerable participants such as those with lower educational levels.

Currently the fact boxes are being updated as different vaccines are already available for different (further) age groups. Further, in addition to the tabular fact boxes, visualizations are being developed to make it easier, particularly for people with limited numeracy or reading skills, to compare the magnitude of possible risks both within and between the decision options.

An interactive version of the fact boxes is being developed, which will allow German users from March 2022 to vary vaccines, age groups and baseline risks.

## References

- i. Brick et al. 2020; Loizeau et al. 2019; McDowell et al. 2019; Schwartz et al. 2009, 2007.

Illustrations by Sam Bradd

### Disclaimers

The World Health Organization (WHO) has invited individuals, institutions, governments, non-governmental organizations or other entities to submit case studies of good practices and innovative solutions in the area of communicating public health science during the COVID-19 pandemic through a public call for submission. WHO has selected a few cases based on a pre-defined rating system and makes such publications publicly available on the WHO website (the "Website").

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