

# The PREPARED Case Study App for deep reflection on research ethics challenges during crises



**A**lliance to the Hippocratic Oath was once considered sufficient to ensure ethical conduct in medicine and health care. But in today's world, healthcare professionals face unprecedented ethical dilemmas<sup>1</sup>, from navigating mandatory COVID-19 vaccinations to addressing systemic racism in clinical care<sup>2</sup>. Simultaneously, the systematic practice of medical research has a history that spans only about 300 years<sup>3</sup>, which has left room for evolution in ethical standards and practices.

One response to the challenge of new ethical dilemmas is new ethics guidance. For instance, during the COVID-19 pandemic, hundreds of new ethics codes and guidance documents were issued around the world in English alone<sup>4</sup>.

What new ethics guidance cannot easily achieve is sharpening moral reasoning faculties and ensuring reflective engagement with ethical dilemmas. This is where ethics training, rather than guidance, comes in. However, ethics training itself is not without challenges. Critics argue that it is often overly influenced by Anglo-American cultural norms, relying heavily on autonomy-based principles<sup>5</sup>. Others question its effectiveness for researchers<sup>6</sup> or doubt its impact in environments with unethical leadership<sup>7</sup>. Additionally, practical barriers, such as limited attention spans, time constraints and the need for dynamic trainers, can hinder its success<sup>8</sup>.

The free PREPARED Case Study app presents research ethics training that is self-paced, engaging, interactive and conveniently packaged so that it can be accessed anytime and anywhere via a smartphone. The cases are built mostly on real-life examples, to be relatable to researchers, thereby increasing the likelihood of deep learning, remembering and applying<sup>9</sup>. The app has been developed for Android, iPhone and iPad devices, to maximize outreach. Android reaches more than 3 billion active devices, and iPhones and iPads reach another 1 billion.

The innovative ethics training currently presents two short, focused training courses

**Table 1 | PREPARED case study app courses and dilemmas**

Type	Topic	Overview
Short course	Ethics in 45 Minutes	The role of rules, virtues, values and ethics codes in ethical decision-making, and an ethical dilemma applying the values of fairness and respect
	The TRUST Code in 45 Minutes	Inequities in global research, such as ethics dumping and helicopter research, and how they can be tackled through the TRUST Code—A Global Code of Conduct for Equitable Research Partnerships
Case dilemma	Are SARS-CoV2 human challenge studies ethical?	Pros and cons of human challenge studies are investigated by the learner before they provide their own view
	AI ethics and research during crisis	AI research that is meant to contribute to achieving the SDGs can have severe negative implications for the worst off
	Ethical challenges for RECs during COVID-19	A fictional dilemma about a psychology project, to be approved or not by the relevant REC
	Scientific collaboration during war	The positions taken around the world on whether to collaborate with Russian Institutions following the Ukraine war and finding one's own position among the possibilities
	Navigating ethical challenges following the nuclear accident in Fukushima	A data and informed consent dilemma that examines the borderline between research and public health crisis management

AI, artificial intelligence; REC, research ethics committee; SDGs, sustainable development goals.

and five research ethics dilemmas inspired by global crises (Table 1). Its content is not only scientifically grounded and quality controlled but also designed to challenge users to critically examine their assumptions and explore fresh perspectives.





Functionalities include polls, sorting buckets, quizzes, professionally designed animations, interview clips, guided dialogues, and audio clips. For the two short training courses, quiz questions are available to test the knowledge gained, and for those app users who answer 80% of the questions correctly, a badge can be downloaded. Additionally, the information tab navigates the user directly to a website that offers more ethics resources. These include free training materials (including short videos), publications, communication materials, fast-track guidance and policy

briefs, all in the context of research ethics and integrity challenges during global crises.

The developers of the app are part of the **EU-funded project PREPARED**, which aims, among other goals, to enhance crises-related research ethics and integrity expertise prior to the next pandemic.

Although the app material is not exclusive to medical research, we are very interested in two responses from the scientific and medical community: which other cases would you like to see (noting that several research integrity cases, rather than research ethics cases, are already in development); and would you be willing, either as an individual or with a class of students, to provide feedback to enable improvement of the app? To download the app and make contact, please visit: <https://prepared-project.eu/app/>.

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Published online: 14 March 2025

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## Acknowledgements

The Dilemma Game App from Erasmus University Rotterdam provided the initial catalyst for the PREPARED Case Study App. PREPARED is funded by the European Union grant number 10048353, and UK participants are supported by UK Research and Innovation.

## Competing interests

The authors declare no competing interests.