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

Allegiance 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 dilemmas¹, from navigating mandatory COVID-19 vaccinations to addressing systemic racism in clinical care².

Simultaneously, the systematic practice of medical research has a history spanning only about 300 years³, leaving 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.⁴

What new ethics guidance cannot easily achieve is sharpening moral reasoning faculties and ensuring reflective engagement with ethical dilemmas. That 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.⁵ Others question its effectiveness for researchers⁶ or doubt its impact in environments with unethical leadership⁷. Additionally, practical barriers, such as limited attention spans, time constraints, and the need for dynamic trainers, can hinder its success.⁸

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 smart phone. The cases are mostly built on real-life examples to be relatable to researchers, thereby increasing the likelihood of deep learning, remembering and applying.⁹

The app has been developed for both Android and iPhone/iPad devices to maximise outreach. Android reaches more than 3 billion active devices, and iPhones and iPads another 1 billion.

The innovative ethics training currently presents two short, focused training courses and five research ethics dilemmas inspired by global crises (see 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 which offers more ethics resources. These include free training materials (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 (<https://prepared-project.eu/>), which aims, amongst other things, to enhance crises-related research ethics and integrity expertise prior to the next pandemic.

Whilst the app material is not exclusive to medical research, we are highly interested in two responses from the NATURE Medicine readership:

1. Which other cases would you like to see? (Two research integrity rather than research ethics cases are already in development).
2. 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/>

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-CoV-2 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 research ethics committee (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 amongst 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.

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