We’ve used devices for contact tracing before – so what’s different this time?

By Amy McLennan,1,2 Ellen Broad,1 Darryl Stellmach,3
1 3A Institute, Australian National University, Australia
2 School of Anthropology, University of Oxford, UK
3 Médecins Sans Frontières, Israel

First published 18 August 2020

Device-based contact tracing for COVID-19 has ignited debates across multiple sectors and multiple nations. Every day there are new articles weighing the design, implementation, legality and merits of device-based approaches to contact tracing. It feels as if this is the birth of an entirely new technological system, and we are all trying to make sense of it.

But contact tracing has a long history. And this is not the first time we’ve used device-based contact tracing in infectious disease outbreaks. This particular future arrived some time ago. So what’s different this time? Why does this conversation feel simultaneously old to some and new to others?

Rewind to December 2013. An 18-month-old boy from a small village in Guinea died from diarrhoea. Five more deaths followed, and similar cases were identified. A pattern began to form. By March, an outbreak of Ebola had been declared across West Africa. The outbreak spread across multiple countries, and lasted two long years.

During those two years, hundreds of university research groups, government actors, non-government organisations and private companies from all over the world actively carried out Ebola-related work across the region. A number of mHealth interventions – mobile phone-based health interventions – were imagined, modelled, developed, tested and deployed. This included apps used by contact tracing staff for field data collection,1 and communication,2 as well as ways to identify people who had been in close proximity to each other, including via Bluetooth;3 RFID tags, body sensors and cloud computing;4 and smartphone apps.5

Despite this history, current conversations about device-based contact tracing don’t often mention these foundational efforts. Why?

Resource-poor settings are attractive places to test new technologies. New technologies have the greatest potential to improve responses to public health emergencies when health infrastructure is poor.6 For example, a lack of resources to manually trace contacts may make the relative gains of technology-enabled approaches much higher. The regulatory environment is often more permissive as well. The potential to scale a new business venture is also high. In addition, the ethics around testing new approaches tend to be less monitored, and public accountability (including of foreign donors and organisations) more limited,7 especially when it comes to data.8

This highlights risks of technology development in under-resourced settings. Structural conditions – such as lack of education and resources – can create harmful power imbalances. The time pressure of an outbreak can lead people to want rapid decisions without frameworks in place to guide safe, responsible decision-making. And new technologies like mHealth interventions can divert attention and resources away from more fundamental health crisis management needs.9 Framing device-based contact tracing technologies as ‘new’ silences their complicated history of development in such contexts, and this perhaps makes them easier to embrace.

Perhaps, also, there is relatively low awareness or interest in places like Australia, the US and the UK about technological developments in West Africa. In a context where relationships between nations continue to be described using language like ‘developed’ versus ‘developing,’ it is easy to assume one ought only look to more ‘developed’ settings to learn anything. This is slowly changing in some areas of medicine, where non-Western diets, medicines, public health approaches,10 knowledges, and wellbeing practices are receiving

There’s a lot that the technology sector could learn from health and medicine when it comes to contact tracing. There’s also a lot the health sector could learn from the technology sector about emerging AI-enabled technological systems. And there’s a lot more work to do to ensure citizens in all nations can safely make informed decisions about new health technologies.
greater attention, but there is a long way to go. There may equally be much to learn from looking to a greater diversity of places and people to inform the design, development, implementation and decommissioning of contact-tracing technologies and other emerging technological systems. Framing device-based contact tracing technologies as ‘new’ closes these voices out of the conversation; it implies there is no history to seek out, and no lessons to learn from people in other times or places.

Perhaps time matters too. A lot has happened in the technology sector since 2015. Concerns regarding the ways technological systems could cause harm are growing. Structures and skills for identifying, assessing and mitigating these harms, for creating and regulating responsible and sustainable technological systems, are being developed. Looking back, some of the ways in which technologies have been implemented in the past would be controversial today.

In a way, the history of medicine is no different. When it comes to health technology deployed at a population-wide scale, lessons learned from global health could add significantly to the debate playing out in the technology sector. Medicine has a long history of testing new health technologies on resource-poor or disempowered populations. For example, we see evidence of medical experimentation on prisoners in Han dynasty China and Hellenic Greece, wartime governments experimenting on soldiers, conscientious objectors and concentration camp prisoners, and clinical studies being carried out on minority populations such as African American men.11

The global health apparatus has gone some way to introducing protections for the most vulnerable, and there is much, much more to do. It has had conversations about consent, data, privacy, ethical conduct and harm. It has agreed ethical principles: the shared Nuremberg Code governing medical research went some way to address the harms observed during perhaps the last major global disruption, the Second World War. A code of ethics by itself is insufficient, though. There have also been well-established infrastructures, laws, policies and procedures to support the implementation of ethics codes, ranging from medical education and accreditation, to access and affordability, to agreed wellbeing metrics, through to strict regulation around the research and testing required before a treatment can be put on the market.

And the health sector continues to anticipate, identify, review, and prosecute harms. In 2007 the World Health Organisation issued a resolution on health technologies for the first time.12 This ensures the same protections apply directly to health technologies including devices, medicines, vaccines, procedures and systems. However, it does not apply to all technologies which affect health. Framing matters here, because calling device-based contact tracing a ‘health technology’ as compared with a ‘technological solution’ invites different perspectives and different protections. And framing device-based contact tracing technologies as ‘new’ can sidestep protections already in place and render irrelevant public understanding that already exists.

Electronic contact tracing isn’t new – that future is already here. Asking why it nevertheless feels new to some audiences brings health, technology and culture into conversation together and raises important questions about this and future technology-based health interventions. There’s a lot that different people can add to the conversation – if they can find a way in.
References


