

**Title:** 3D Printing, IPR and Health Emergencies

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**Abstract:**

The COVID-19 pandemic has exponentially accelerated the use of 3D printing (3DP) technologies, in healthcare, as many schools, universities, organisations and individuals have united together to print the critical equipment needed to protect key workers and private people. Surprisingly, with COVID-19 we have seen almost no public IPR dispute on the 3D printed medical equipment produced to cope with the health crises. Yet, it is difficult to see how IPR was not relevant for any of the various equipment (e.g. medical equipment, tracking systems, software, vaccines, diagnostics, therapeutics) that have been printed out without expressed consent from IP holders. It is indeed other reasons that led to IP owners not to enforce their rights during the pandemic (e.g. fear to attract bad reputation during a declared situation of national emergency).

As of today, there is no internationally recognised general exception to IPR enforcement for health emergencies. While tools like compulsory licensing, combined with various types of voluntary licensing arrangements, are often referred to as being able to alleviate access to and distribution of innovations in critical situations, most of these tools suffer from multiple shortcomings, like burdensome administrative processes, as well as fragmentation and uncertainty. The non-existence of such exceptions for health emergencies/pandemics, has meant that the 3DP community had to take on the remarkable risk of being sued for IP infringement during COVID-19.

This study contextualises these key issues in relation to the role of 3DP in the fight against global health emergencies and crises. Building upon the experiences gathered during the COVID-19 pandemic, we look at the future to see what adjustments to the IPR system must be considered to make the best use out of these types of digital technologies that enable local production, manufacturing building capacity and provide considerable advantages for supporting production in situations of broken supply chains. We build upon this analysis to develop novel mechanisms that could be further explored and tested within the IP system to add more flexibilities needed to more smoothly overcome situations like global health emergencies through the help and support of digital technologies.

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